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ABSTRACT

School system leaders are discovering the power of data for promoting school improvement. This guide provides practitioners, parents, and community with insights and tools for cultivating a districtwide culture of data-driven inquiry. Chapter 1 points out that data provide quantifiable proof, taking the emotion and rancor out of the decision-making process. Chapter 2 recommends that districts use multiple assessment and nonassessment measures when assessing student performance. Because methods for data collection vary, superintendents should start by asking what they need to know and what data will help answer their questions. Chapter 3 recommends that teachers, principals, district staff, and the community should be involved in gathering, analyzing, and discussing data; and that crafting a comprehensive strategic communications plan can help superintendents identify key messages, audiences, results, and effective tools. Chapter 4 emphasizes that successful data-driven decision-making requires a shift in the culture of a school district that encourages the use and analysis of data without fear of reprisal. Appendix A contains accountability measures, Appendix B contains advice and techniques for working with the media, Appendix C is a list of resources, and Appendix is a glossary. (RT)

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ED 469 227

Using Data to Improve Schools

What's Working

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Using Data to Improve Schools

What's Working

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About AASA

The American Association of School Administrators, founded in 1865, is the professional organization for over 14,000 educational leaders across the United States and in other countries. AASA's mission is to support and develop effective school system leaders who are dedicated to the highest quality public education for all children.

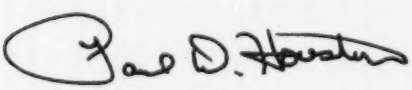
Foreword

School system leaders are discovering the power of data for promoting school improvement. With recent advances in technology and the increased demand for assessing student learning, an unprecedented amount of data are available to educators. School districts across America are beginning to use the tools necessary to make effective use of the data. In addition to test scores, many educators are collecting data about citizenship, character, healthy lifestyles, school climate and parental and community involvement.

One superintendent reflected that "We spend a lot of time on testing but not much time on what to do with the test results." As educators shift their focus from simply reporting test results to using the data to improve instruction, data become essential ingredients in school improvement. Educators know that the effective use of data can measure student progress, evaluate program and instructional effectiveness, guide curriculum development and resource allocation, promote accountability and, most importantly, ensure that every child learns.

Using Data to Improve Schools: What's Working is an easy-to-read guide to using data to drive school improvement. School system leaders and their staffs can learn from this book how to build a districtwide culture of inquiry that values the use of data for sound decision-making. School board members, parents and community members interested in helping improve schools will find tools for their work as well in this guide. It describes the challenges and the successes of educators from districts both large and small committed to using data.

We are sure that you will find this guide useful in your ongoing efforts to provide leadership to your schools and communities.



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Chapter 1: Why Data Matter

- *What goals has your school district set for the next three years?*
- *What data will help judge whether the district is meeting its goals?*
- *How are superintendents using data they currently collect to improve student achievement over time?*
- *What additional data must be collected and why?*
- *In what ways are teachers, principals, district staff and the community involved in data collection and analysis?*

Many superintendents have a powerful ally on their side: data. Increasingly, superintendents are using data to make smarter decisions, and they are getting results. Instead of responding defensively to critics, they are armed with facts and figures that tell a more complete story and help critics understand the root causes of the challenges schools face.

"Data-driven decision-making is about gathering data to understand if a school or district is meeting its purpose and vision," says Victoria Bernhardt, author of *Data Analysis for Comprehensive Schoolwide Improvement.* (See A Closer Look on page 2.) "If we do not have a target, we could make decisions that essentially lead to 'random acts of improvement.'" Instead, Bernhardt says, superintendents should strive for "focused acts of improvement," which occur when schools are clear about their purpose, about what they expect students to know, and about what they expect students to be able to do.

> *If I, as the superintendent, cannot talk about how much learning has occurred, then I'm not achieving what I had hoped to as superintendent.*
>
> *— Gerrita Postlewait, superintendent, Horry County (S.C.) Public Schools*

In data-driven districts, superintendents work side by side with other administrators, teachers, principals and parents to ensure all children achieve. Everyone strives toward common goals. Data provide quantifiable proof, taking the emotion and rancor out of what can be tough calls for superintendents and school boards (e.g., dismantling a popular but ineffective program or closing a school). Data also provide the substance for meaningful, ongoing dialogue within the educational community.

For the past several years, Superintendent Gerrita Postlewait and the Horry County (S.C.) Public School Board have made data-driven decision-making the cornerstone of school improvement. "This is now a school system that focuses on results," Postlewait says. "If I, as the

What is data-driven decision-making?

- Collecting data
- Analyzing data
- Reporting data
- Using data for school improvement
- Communicating through data

Data-driven decision-making requires a cultural shift in thinking that must be nurtured so all stakeholders are committed to this effort.

superintendent, cannot talk about how much learning has occurred, then I'm not achieving what I had hoped to as superintendent." (See Getting Results on page 3.)

Postlewait and other superintendents acknowledge that data were not always at the forefront of their decision-making. Until recently, they collected data only because gathering this information was mandated by the state in return for funding. Rarely were data used to analyze whether children were learning at grade level, teachers were using sound instructional practices or parents were pleased with the quality of schools.

"Many school improvement plans are hit or miss," observes Superintendent Roland Smit, who heads the 600-student Mobridge (S.D.) School District. "We may think we should work on a specific area but we don't always look at the indicators that may tell us this is, in fact, something we should work on. With the help of data, we can zero in on our weaknesses." Data help superintendents like Smit make decisions with far greater precision and clarity.

Data help district and school leaders craft a sound blueprint with measurable results for continuously improving schools so decisions are no longer based on incomplete or biased information. The challenge for superintendents is to know specifically what they are evaluating. For example, is a particular math program effective? Which students are showing the greatest gains and why? How can we target those who are showing the least improvement? Superintendents can focus on a specific grade level or measure overall progress toward meeting math standards, or they can use data to see how many students are at levels of proficiency or excellence in math.

Data help:

- Measure student progress
- Make sure students don't fall through the cracks
- Measure program effectiveness
- Assess instructional effectiveness
- Guide curriculum development
- Allocate resources wisely
- Promote accountability
- Report to the community
- Meet state and federal reporting requirements
- Maintain educational focus
- Show trends (but not necessarily solutions)

Data do not help:

- If the data are not valid and reliable
- If appropriate questions are not asked after reviewing the data
- If data analysis is not used for making wise decisions

A Closer Look

Victoria Bernhardt

Author, *Data Analysis for Comprehensive Schoolwide Improvement*

For many, data are confusing, even intimidating, but in your book you say data are logical if we think about what we need to know and why. Tell us more about that.

If questions can be created, the data that are needed to answer the questions are very logical. For example, for the question "How well are we

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doing?" one would probably want to look at student achievement results on standardized tests and state or district assessments to get an idea of how students in the district are scoring right now. For the question "Are all students learning?" one might want to take the general student achievement analysis to a deeper level, looking at the distribution of scores to understand which students are scoring below mastery, and how far they are scoring below mastery.

You also write that data can help uncover solutions to some of the toughest challenges schools face today. How so?

I think data can help us see things we might not see otherwise. We might have processes or programs in operation for years. Once we look at the data from all angles, we might find that a program is not helping all students learn. Data help us get to the root causes of a problem so we solve the problem and not just the symptom.

In what ways can superintendents use data to improve student achievement?

Student achievement data, for example, can help superintendents understand which instructional strategies are creating the best results and see where additional training might be needed. Perceptions data can tell superintendents about parent, student and staff satisfaction with the learning environment, which also could reveal areas in need of improvement. Staff perceptions can

Getting Results

Horry County, S.C.

In the early 1990s, the Horry County (S.C.) School Board was granted the authority to raise taxes. School board members, parents and community members in the racially and economically diverse school district of 29,000 students wanted to know the district was spending their taxpayer dollars wisely.

Gerrita Postlewait, who was an instructional specialist with the district at the time, says the district staff began by re-examining their expectations. "For example, what kind of achievement results did we want to see," Postlewait says. "What kind of activities did we want? Those questions and others kick-started the data-driven decision-making process."

District leaders, principals and teachers learned a lot along the way, including that at-risk four-year-olds enrolled in the district's structured academic prekindergarten program scored consistently higher in reading, math and writing in first, second and third grades than students who participated in preschool programs sponsored by other governmental agencies. In fact, by third grade, 75 percent of the students who attended the district's preschool program scored higher than their counterparts in reading and writing.

After collecting and analyzing the data, the district expanded the prekindergarten program by an additional 200 children. "As we prepared our budget, we had a way to talk with our public about why this proposed change was important," Postlewait says. "We could show a reduction in the amount of time we have to spend with these students in remedial education a little later in grades one, two and three."

Postlewait became superintendent of the district in 1997. "It's chaotic and bone-wearying work, but it's worth it because we are now seeing gains in student achievement. This is the first year we have had results to celebrate."

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tell superintendents what is possible. Demographic data can provide valuable information about meeting the learning needs of students in the future, including: How might the makeup and size of the school population change? Or, how many new teachers with specialties will be needed in the near future?

If you are a superintendent using data for the first time, where do you begin? How do you get started?

I would start by understanding what data exist in the district and see what data I can get easily elsewhere, like the state education department or other sources. Undoubtedly, I could get demographic data, such as enrollment and attendance figures.

I also believe that perceptions data is very important for understanding schools and the health of the district. I would administer online questionnaires to students, staff and parents. Then, if I were really on the ball with the data analysis, I would set up a comprehensive database to store and analyze the data at the district, school, classroom, teacher and student levels.

> *Not everything that is faced can be changed, but nothing can be changed until it is faced.*
>
> *— James Baldwin, author*

What sort of leadership must a superintendent provide as more and more teachers, district staff, board members and others use data?

I believe that superintendents must create a safe environment for data-driven decision-making. Superintendents must lead, model and encourage staffs to use different types of data and examine the numbers systematically to avoid knee-jerk reactions to single, independent pieces of data. It will require training and trust so that every staff member can have access to, and look at, data on an ongoing basis. It requires a vision that is truly shared, so staff members are all continuously improving in the same direction.

Getting Started

One of the biggest challenges for any district implementing data-driven decision-making is knowing where to begin. Often, there are so many data to choose from that the process can be overwhelming for district staff, teachers and principals. The best advice is to start with the basics. Too often, school administrators and staff collect data without first figuring out what it is they need to know.

"We recommend not fishing blindly as you review data," says Mike Parker, assistant director of the Center for Accountability Solutions at the American Association of School Administrators (AASA). "If you don't have a purpose in mind, it's easy to get off track."

A district should begin data collection by defining what it wants to know. Is the strategic plan the district put in place three years ago improving student performance? Why are high school freshmen in your district garnering low grades in English? Did the district make good on its promise to the community that test scores would increase 5 percent over last year's scores?

In *Data Analysis for Comprehensive Schoolwide Improvement*, Bernhardt lists seven questions to help focus the early stages of data-driven decision-making:

- What is the purpose of the school or district?
- What do you expect students to know and be able to do by the time they leave school? (Standards)
- What do you expect students to know and be able to do by the end of each year? (Benchmarks)
- How well will students be able to do what they want to do with the knowledge and skills they acquire by the time they leave school? (Performance)
- Do you know why you are getting the results you get?
- What would your school and educational processes look like if your school were achieving its purpose, goals and expectations for student learning?
- How do you want to use the data you will gather?

Chapter 2 takes a closer look at different types of data that can help answer these questions. Of course, the best questions are the ones superintendents, principals, teachers and school board members develop together.

Making decisions based on data is a little like being a detective. Good data analysis requires asking lots of questions, uncovering more and more information and revisiting hypotheses along the way until a complete picture — supported by the facts — unfolds.

Challenging Assumptions

Data-driven school improvement requires administrators to challenge their own assumptions. Almost every district has common beliefs about a school or groups of students. One school may be known for its nationally ranked reading program. Another may be closing the achievement gap among different groups of students. But are these schools really accomplishing what they think they are? How do they know for sure?

Data help district leaders determine whether their perceptions match reality. Running a longitudinal analysis, for example, will show whether a reading program is

> *You use data to inform the doctor of the progress of the patient. You determine whether the patient is progressing in a good direction — or is there additional assistance that the patient needs? That analogy works for me, because that's really what you're asking for: You want data that are more diagnostic, that permit you to monitor progress on a regular basis and that provide you with the student's vital signs of learning.*
>
> *— James Parsley, superintendent, Vancouver (Wash.) School District*

Lessons Learned from Seattle

Spokane (Wash.) Superintendent Brian Benzel learned the following lessons using data to drive decision-making in the Seattle (Wash.) Public Schools:

- Start small; don't overwhelm staff with a "data dump."
- Begin with the core issues, such as student achievement in reading or mathe-matics.
- Listen to what the data tell about the big picture; don't get lost in too many details.
- Work to create trust and build support by laying data on the table without fear of recrimination by staff.
- Provide training opportunities for staff on how to use data.
- Be patient, working with what is possible in the district.

sustaining its impact over time. Disaggregating data by different student populations will show which students are excelling and which are falling behind. These clues begin to form a picture of what is really happening in schools.

In the rural community of Antigo, Wis., 90 miles northwest of Green Bay, data helped Superintendent Lance Alwin bridge the divide between educators and families that homeschool their children. The work began when the Antigo Unified School District reviewed progress toward its goals, one of which was to become "an inclusive educational community."

"One of the questions that I asked was why we weren't providing services to families of homeschoolers," says Alwin. "The response was that homeschoolers are on the religious fringes. They want to do their own thing and they don't like what we have to offer."

It was a stand off, Alwin recalls. But if the district truly was to be an inclusive community, it would have to tackle this issue head-on.

Data about the district's homeschool population was collected and analyzed. The district surveyed its homeschool population, asking parents why they homeschooled their children.

What the district learned challenged long-held perceptions. First, data revealed the number of families homeschooling their children was much higher than originally thought. The data also showed that religion was not the number one reason parents homeschooled their children. Instead, parents said they felt they could do a better job than the public schools. District leaders also were surprised to learn that 80 percent of homeschool families were interested in accessing instructional resources provided by the district, as long as no strings were attached.

In response, district leaders created a unique charter school designed to meet the needs of homeschool families based on the information and data they had gathered. The school opened during the 1997–98 school year with four students. In 2000–01, 62 children enrolled in the school. "We've had to turn students away," says Alwin. "Now, we're getting calls from homeschool families several counties away because they have heard that this school district is willing to work with them."

The district is meeting its goal of becoming more inclusive. During the 1997–98 school year, 178 children who were eligible to attend the schools in the Antigo Unified School District were homeschooled. During the 2000–01 school year, the number dropped to 119, bucking national trends. Alwin says confronting the data forced the district to examine new relationships. "This was rich data for us to mine," says Alwin. "It helped us determine how to create a charter school that was of use to them, not us."

Asking the Right Questions

The more administrators dig for answers, the more questions emerge. As they analyze the data, they begin to see patterns and trends. They may notice a cluster of schools doing better than the rest of the district. Still more questions surface. What are these schools doing differently? Can these best practices apply to other low-performing schools in the district? Why or why not?

Those who have experience using data say some questions will elicit more substantive information than others. In *Using Data for School Improvement*, a 1998 report by the Annenberg Institute for School Reform, Kate Jamentz, WestEd's director of programs in professional and organizational learning, says:

> For example, questions that ask "which" are better than those that ask "how many?" Asking which students are not meeting the standards in reading is better than asking how many students are meeting the standards. It is important to look at the types of questions we're asking because the nature of a question determines next steps in data collection and analysis.

Phil Streifer, associate professor of educational leadership at the University of Connecticut and a data specialist, calls an in-depth line of questioning the "drill down" process. (See Chapter 2 for more on the "drill down" process.) Streifer says the drill down process "starts with a global question or issue, which is then broken down into its component parts for analysis." Streifer says once the data analysis is completed, the team can make "a reasoned decision on next steps."

Newark (N.Y.) Central School District Superintendent Robert Christmann agrees. "Data are only as good as the questions you are asking. You need your questions to be as specific as possible so you can know whether your efforts are successful."

Key considerations when formulating questions include:

- How should student achievement be measured in the district?
- Are goals for student achievement based on data elements aligned with what the teachers teach?
- What are the best indicators of student achievement upon which the district should base its decisions?
- What indicators of student achievement are collected regularly throughout the year so that informed decision-making can occur?

Computer Software and Data-Driven Decision-Making

Companies are creating software tools for superintendents and staff who are engaging in data-driven decision-making. AASA's Center for Accountability Solutions advises consumers to look for software that offers flexibility to customize district data reports. These reports should allow district leaders to review data for different student groups over time.

"Through our experience, we have found that each district's unique needs will determine which tool is best," says Geannie Wells, the center's director. "There is no one-size-fits-all solution."

Be sure to compare different software products. Talk with district staff, teachers and others about what capability the software should have to meet their needs.

Districts should ask two sets of questions when purchasing data software — one of themselves and one of the vendor.

District leaders should ask themselves:

- What types of data should be included?
- Who will need access to which data elements?
- Is a product accessible through a web browser attractive?
- Is the infrastructure available to house a web-based product?
- Is it feasible to use an application service provider (ASP)?
- Is it acceptable to house the data outside the district on nonschool-system servers?
- How many records and fields are needed?
- How often will the district need to refresh data?
- Should the software allow the district to create groups, select assessments and generate its own reports or should the district select software with existing templates?

After deciding what the district's needs are, administrators can shop for software armed with a list of consumer-savvy questions for the software vendor, such as:

- How will district data be transferred into the new software system?
- How many data updates are included in the software cost?
- Who is responsible for importing new data?
- What security features are built into the software?
- What are the limitations on fields and records?
- What type of, and how much, technical support will be provided by the vendor?
- How much on-site training does the vendor provide?
- When new software features are developed, are they provided free of charge or will districts have to pay for an updated version?
- What type of database is required?
- In what format are the data stored?
- Can districts receive all of their data upon request?

What's Available?

Increasingly, manufacturers of traditional student information systems are adding decision support services. It is wise to research what features the district's software vendor might include in the future before purchasing new software or completely overhauling existing technology.

Lots of data-specific software options also are on the market. Some packages offer a suite of software tools designed to help districts collect and analyze disaggregated data. These tools can collect and report longitudinal data on individual students, including demographic and testing information, or track different areas, such as safety and security, curriculum and instruction or parent involvement.

Other web-enabled software allows districts to collect and analyze data that help them report on student performance and identify solutions. Still other software offers an analysis of questions tied to equity, as well as comparisons that highlight the effectiveness of programs, grade-level groupings, technologies in the classroom and more.

> *Time is money in a school district. Using a computer software program that helps collect and analyze data allows us to spend that time and money more wisely.*
>
> *— Roland Smit, superintendent, Mobridge (S.D.) School District*

Software prices vary widely. Some companies charge a fee based on enrollment, while others charge per school or site. Some districts require more customization than others, which drives the price up. Some software packages, such as Quality School Portfolio (QSP), are free at this time.

A listing of many such products is available from AASA's Center for Accountability Solutions at *www.aasa.org/data*.

Homegrown Efforts

While some districts prefer to use commercial software, other districts are developing homegrown models using existing software tools to store and access data. Like their commercial counterparts, these tools disaggregate data and conduct statistical analyses. Typically, they can store multiple indicators of student achievement, everything from grades to dropout rates to annual assessments and more.

As chief operating officer for the Seattle (Wash.) Public Schools before becoming superintendent in Spokane, Wash., Brian Benzel and his staff worked to create a "data decision support system."

"First, we worked to create a profile of a Seattle Public Schools graduate," Benzel says. "The profile reflects a series of statements about what we wanted our graduates to accomplish, including the importance of communicating clearly, thinking critically and working productively in teams."

The district also examined its grade-level standards in mathematics, reading and writing to make sure students were learning the skills and knowledge they needed to reflect the Seattle Public Schools Graduate Profile.

Benzel and his staff used multiple indicators to gauge whether teachers were using the most effective instructional practices and what impact those practices were having on student achievement. The indicators are grouped into five categories, including academic achievement and student behavior. Test scores, attendance rates, truancy rates, student climate surveys, staff surveys focusing on areas such as teamwork, leadership and curriculum, and other data are used to measure overall progress.

Benzel began developing a "value-added school indicators profile" that uses longitudinal data to predict student achievement. "We wanted to make sure that a year's worth of instruction was resulting in a year's worth of gains," Benzel says.

> *We wanted to make sure that a year's worth of instruction was resulting in a year's worth of gains.*
>
> *—Brian Benzel, superintendent, Spokane (Wash.) Public Schools*

The stakes are high in Seattle, where parents decide which school their child will attend. Funding follows the student. "In a choice system like [Seattle's], customers need to know how schools are doing so they can make wise choices," Benzel says.

In Poway, Calif., just north of San Diego, the school district has taken another "homegrown" approach to data-driven decision-making. This suburban, upper-income district of 32,000 students began its foray into data-driven decision-making in 1996. The district had completed an intensive strategic planning process, but was struggling with how to measure whether it was achieving its vision, mission and core values.

Director of Learning Support Services Ray Wilson says data analysis began with identifying what the district wanted to measure. Charting student progress was at the top of the list. "For example, there's research that shows that students who aren't reading at grade level by third grade will have problems later in school," Wilson says. "So, one benchmark we set was that all third graders would be reading at grade level before going to fourth grade."

Decisions also were made about who would collect what data. The district agreed to collect benchmark data (e.g., third grade reading scores, fourth grade writing scores, fifth grade mathematics assessments, etc.) and provided school leaders with training and tools to help them collect and analyze their own annual data. A part-time data analyst was assigned to every school. "A principal does not have time in her day to sit and analyze data," Wilson says. "You can look at the data and see a problem, but investigating the 'whys' behind it can take hours and hours."

Data-driven decision-making has prompted Wilson and his colleagues to redefine what qualifies as data. Early on, they largely thought of it as student performance data — state and local test scores. It wasn't long before they realized they needed to broaden their definition.

"For example, in a district like ours with a large white population, it's easy for the majority student population to mask the problems of minority students," Wilson says. "Our students score at the 80th percentile on norm-referenced tests, but when you disaggregate the data by race, gender, ethnicity and the number of years a student has been enrolled in the district, you

find small pockets of students performing at the 30th and 40th percentiles." In other words, it's not just about tracking how well students are performing on tests, but determining which students are not doing well and why, and then seeking improvements.

Using data wisely requires clarity of purpose, time and a desire to seek and understand improved educational achievement. Ultimately, superintendents say that data have made their job easier because data help them determine whether the policies approved at the district level are having the intended impact in the classroom.

Summary

Key points in Chapter 1 include:

- Data provide quantifiable proof, taking the emotion and rancor out of the decision-making process.
- Determining what data to collect is based largely on first figuring out what is important to know about student performance, teacher quality, parent and community satisfaction and other issues tied to district goals.
- Data-driven school improvement helps superintendents and others know whether the district and its schools are realizing their vision and purpose.

Chapter 2: Using Data to Make Smart Decisions

- *What different types of data should superintendents use when assessing student performance?*
- *How can data analysis effectively target student achievement gaps?*
- *Which methods work best for efficient — and accurate — data collection?*
- *What analytical methods can school administrators employ so they are confident that they are interpreting data correctly?*
- *How can superintendents develop an effective accountability program that is supported by staff, parents and the community?*

Often, the term data is confused with the term statistics, but the two are not interchangeable. Data go beyond numbers, averages and percentages. They are the raw materials for effective decision-making. But to make the right decisions, superintendents need the right tools.

No single set of data or collection method applies to all school districts. While districts might share common goals, demographics and achievement levels, they are not identical. Therefore, it is essential that districts consider their unique traits when developing their data systems. Such consideration will invariably help their efforts to improve student achievement.

> *Collecting data without purpose is meaningless.*
>
> *— Theodore B. Creighton, author, Schools and Data: The Educator's Guide for Using Data to Improve Decision Making*

There are some commonalities in all data collection. Successful integration of data-driven decision-making into educational strategy requires a team approach. That teamwork starts with the relationship between the board of education and the superintendent. The district's expectations must be clearly articulated, measurable — and attainable. The roles of the school board and school staff must be clearly defined. And the superintendent — who ultimately is responsible for coordinating the data collection, regulation and reporting — must work collaboratively with the board, staff and community to lead the district toward improved student performance.

Data Types and Applications

Before student performance can be improved, it must be defined and measured. Indicators of student performance include:

- Test scores
- Rigor of coursework
- Graduation rates
- Attendance rates
- Promotion rates
- Rates of participation in co-curricular activities (including community service)

Learning is not attained by chance, it must be sought for with ardor and attended to with diligence.

— Abigail Adams, letter to John Quincy Adams

Data can be measured on many levels. By looking at aggregate data, superintendents can form a general assessment of a particular curriculum, class or school. But breaking down, or disaggregating, data provides a more complete view. It goes beyond the "what" and tries to discover the "why" and "how." For example, 32 percent of ninth graders at Elmwood High School passed advanced algebra. Aggregated, the data do not bode well for the advanced algebra program. When the data are disaggregated, a more complete picture comes into focus.

By asking more questions — What percentage of ninth graders took advanced algebra? What is the program's gender breakdown? Are any of the students in an English as a Second Language (ESL) program? Is this the first honors course for any of the students? — superintendents get more complete answers. Time, staff capacity and cost factors prohibit unlimited disaggregation, but asking a few, specific, thoughtful questions provides better data. And better data lead to better decisions.

Collecting Existing Data

Data collection starts with this question: What in particular does the district want to learn? Once this question has been answered, Phil Streifer, associate professor of educational leadership at the University of Connecticut, recommends conducting a data audit to determine if the needed data are available. When beginning to search for the answers, superintendents should first look at their own information. Districts already keep track of certain data in different ways and in a variety of places such as teachers' files on students, individual school offices, district offices, even board member files.

Existing data sometimes are found in digital format on spreadsheets. This is often the easiest and most efficient way to maintain data. While many spreadsheet applications are available, superintendents should consider using a program that incorporates or easily converts this data to graphics. The ability to present data graphically is essential — especially when dealing with community stakeholders and the media. (See sidebar on p. 34.)

In many cases, if the data are not immediately at hand, superintendents do not have to look far to find answers. "A lot of valuable data can be found if districts look at their own practices," says Theodore B. Creighton, associate professor of educational leadership at Sam Houston State University. "There are a lot of data that we should collect that we don't collect." For example, tracking parental involvement — hours spent at school, Parent-Teacher Association participation, and so on — can easily be accomplished.

That leads to another question: Are the data important for school improvement? Perhaps the parental involvement data are essential for one school, but the issue is not important for another. Even in the same district, schools have different data needs — and different ways of collecting data.

Collecting New Data

Although some data will already be available, not everything is easily accessible, and Streifer advises superintendents to consider the cost benefits of collecting new data before proceeding. "Many districts often want to add student tests to match state mastery testing in the 'off' years for longitudinal analyses. A decision should be made concerning the cost benefit of adding these tests in terms of lost instructional time and the cost of purchasing, administering, scoring and analyzing these tests."

How do superintendents know what new data are worth generating? "This depends on the mission-critical nature of the question under consideration," says Streifer. "If the data needed are the only way to address the problem, and the question is mission-critical, then, yes, they would be worth generating."

There are other considerations beyond cost:

- Are the data being used to achieve a district goal?
- Are the data the only way to address the problem?
- Given that it generally takes six months to three years to generate, collect and analyze data, can the district wait? Will the data still be relevant to the question?

Examples of Targeted New Data Sources

Every district collects and analyzes data on student test scores and grades. But there are other ways to measure student performance, such as:

- surveys and questionnaires (of teachers, students, parents, employers, community members, etc.);
- interviews or focus groups (with the same groups mentioned above);
- teacher logs/diaries;
- classroom observations of actual instructional practices and student responses;
- alternative assessments (e.g., work samples, portfolios, senior projects and performance tasks); and
- locally developed pretests and posttests.

Qualitative information, which describes what people actually say, do, think or feel, puts a human face on quantitative data. It provides depth and detail and may increase a person's understanding of a situation.

Source: *At Your Fingertips: Using Everyday Data to Improve Schools, 1998*

Data Collection to Support Student Achievement

Plainview, Okla.

Data collection is not a one-size-fits-all process. And it is not limited to those districts where student performance is below standard. High-performing schools are finding that data collection and analysis can help them build upon an already solid foundation.

Plainview School in southwest Okla. is a rural PreK–12 school with approximately 1,200 students. The school began extensive data collection in 2000.

"The most difficult part was finding what we wanted to analyze — and working with others on resistance to change," says Lisa Moore, Plainview's principal. "The easiest part was making the decision to look at our education process in order to improve."

Plainview's accomplishments are impressive. In a ranking of Oklahoma's 547 public schools, the school came in 11th in efficiency and 18th in student performance. Several nationally certified teachers are on staff and, in 1999, Plainview was recognized by *Expansion Management* magazine as a "Blue Ribbon Scholar School."

Moore thinks that, in some ways, rural school districts have data collection advantages over larger districts. "Rural schools typically are smaller, thereby making it easier to obtain clear, close-to-the-student data," she says. "We have unique opportunities — like close communications — to facilitate data collection and usage."

Plainview uses observations, surveys and standardized test score analysis to collect data. The data are presented through reports on individuals, classes, grade levels and school buildings.

Moore emphasizes that the purpose of the data collection and analysis is to enable the school to make appropriate decisions about curriculum structure and alignment. "The school board, with the help of the administration and faculty, uses results to ensure that we are meeting the needs of our students and steadily increasing our school improvement process to the maximum potential," she says.

Testing Results Are More Than Grades

The most widely used — and publicized — method of assessing student performance is testing. But testing is not a one-size-fits-all endeavor. The different kinds of tests — each with their own guidelines — can be subject to different interpretation.

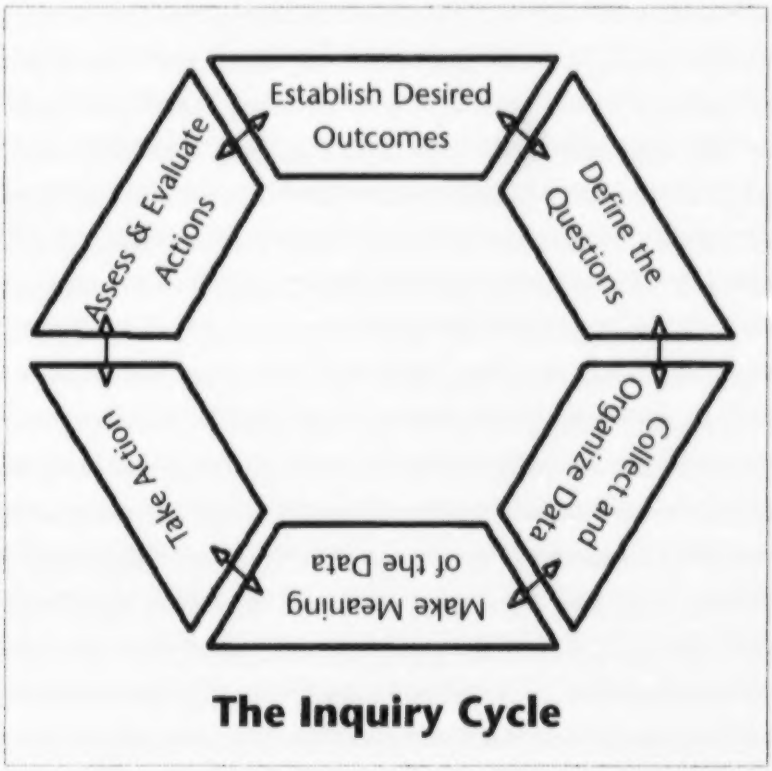
- Norm-referenced tests, the most common form of educational achievement tests used, compare individual student performance with a national sample of others in the same grade. Results often are described as "students scored in the 62nd percentile," meaning that they scored higher than 61 percent of the students who took the test (Iowa Tests of Basic Skills, Stanford Achievement Test, etc.).
- Criterion-referenced tests measure an individual's performance against a well-specified set of standards. Results often are described as "62 percent of students met or exceeded the standards" (National Assessment of Educational Progress, state proficiency tests, Advanced Placement exams, etc.).
- Performance tests require students to demonstrate their abilities (via portfolios, presentations, experiments, etc.).
- International tests, though not technically a test "type," have gained prominence by comparing student performance by country (Third International Mathematics and Science Study, etc.).

It is important that tests be reliable and valid. Reliable tests are consistent; when different individuals review their results over time they arrive at the same conclusion. Defining validity in a test is not as precise. In essence, a test is valid if it measures what it claims to measure.

Here's another way to think about it. Let's say a man steps on his bathroom scale every morning, and the scale reads 240 pounds. Each morning the result is the same, meaning the scale is reliable. When the man heads to the doctor for his annual check-up, he is weighed on the doctor's more accurate scale, and the results are different. This scale shows that the man actually weighs 245 pounds, 5 pounds more than on his scale at home. Although the man's scale at home is reliable, it is not valid because it consistently underestimates his weight. All measures are subject to the same types of errors. Verifying both reliability and validity is critical to ensuring that tests actually are measuring what they purport to measure.

When data show gaps in student performance, they show more than where a school or district did not meet its goal. When analyzed, these data show which student groups need more improvement, thereby enabling districts to address students' needs. For example, Elmwood High School's goal was for ninth graders to score in the 60th percentile on the state mathematics test. That school year, the students scored in the 50th percentile. While the school did not meet its goal, the results were not considered a failure, and the district set about to improve overall performance. Further

The Annenberg Institute for School Reform has developed the Inquiry Cycle, six activities that attempt to capture an ongoing, nonlinear process that involves the interaction of reflection and action. Each activity is essential; none may be omitted. The inquiry process is not over after completing one cycle. The six activities are:



The Inquiry Cycle

Source: *Annenberg Institute for School Reform*

analysis showed that female students scored in the 40th percentile, while male students scored in the 60th. The question for the district changed: Why is there a difference in performance between male and female students, and how can this gap be closed?

Indicators of student achievement also go beyond academic attainment. They include "softer" measurements. Qualitative measurements, in a sense, humanize the data by going beyond the numbers. These "quality-of-life" indicators include:

- job skills and preparation;
- citizenship (volunteerism, voting, etc.);
- appreciation of the arts;
- development of character and values (integrity, patriotism, work ethic, etc.); and
- healthy lifestyle.

Even rich assessment tools are relatively impotent if not embedded in systems committed to the standards they address, hungry for the data they produce, and willing to challenge and redesign traditional practices and organizational structures that get in the way of each student [meeting] those standards.

— Kate Jamentz, director of programs in professional and organizational learning, WestEd

Interpreting Data

Education reform is — and will continue to be — scrutinized by the media, politicians and community stakeholders. Therefore, it is vital that any data collected be interpreted accurately and fairly. "Achievement gains tend to occur when a school analyzes student performance data and develops a plan of action based on that analysis," says Daniel Domenech, superintendent of Fairfax County (Va.) Public Schools. "Conversely, schools that select programs based on 'perceived' needs almost always meet failure."

The Vermont Department of Education recommends the following when analyzing student performance data:

- Whenever possible, use data from the same sources from year to year.
- Collect and analyze as much data as possible. Use multiple measures.
- Always consider the nature, size and characteristics of the group being tested.
- Be sure to know what is being measured.
- Remember that large-scale assessment data are about the school's program — not just about the grade at which the assessment is administered.

- Compare performance from different groups of students (disaggregated data). The goal is to reduce differences in performance among groups while increasing excellence for all.

Reacting to a single test score is perhaps the most common mistake made when interpreting data. Longitudinal measurement — conducted consistently from year to year — is necessary to properly measure progress, growth and change. The consistency of the data elements — necessary for any long-term data collection and analysis — reduces confusion.

> *If your data set is only test scores, you are doomed.*
>
> *— Suzanne Bailey, restructuring issues consultant, Tools for Schools, August/September 2000*

The level of analysis also can diffuse misinterpretation. The "drill down" process is an effective method of disaggregating data. It begins with a general question, then "drills down" the question into smaller and smaller parts. In *Data Analysis for Comprehensive Schoolwide Improvement,* Victoria Bernhardt describes four layers of disaggregation:

First-Layer Disaggregations

How many students are there?

- Male vs. female
- Limited English Proficiency (LEP) vs. non-LEP
- Ethnicities
- Lunch codes

Second-Layer Disaggregations

How have the demographics changed over time?

- Increases vs. decreases in categorical variables

Third-Layer Disaggregations

What percentage of students are gifted, and are they equally distributed among genders and ethnicities?

Fourth-Layer Disaggregations

How has the enrollment of LEP students entering the building changed over the years?

Do students with higher attendance get better grades?

"Walking Through" Data Collection

Palisades School District, Pa.

The Palisades School District is a 100-square-mile area in Upper Bucks County, Pa., with a population of approximately 15,300. It serves 2,200 students in three elementary schools, a middle school and a high school.

When Francis Barnes took the job as superintendent, he was charged with finding out why students received good grades on report cards but performed poorly on standardized tests. Then Barnes had to develop a plan to improve student performance.

The first task at hand was to collect existing data. "There were a variety of pieces of data in a number of places," Barnes says. "The problem was that the data were not organized sufficiently to permit any analysis. Nor did the administrators or staff have training in the analysis of data for the purpose of improving student performance."

Barnes and his staff developed an action plan that was aggressive, yet thoughtful and realistic. "We generated, by consensus agreement, a data-driven decision-making model," he says. "Our data-driven process engages stakeholders in decision-making to attain district goals. This data-based decision-making vision required us to gather all the available data and analyze the information, seeing what we actually had and also what was missing." This included mainly state test and standardized national test data.

The district then participated in a pilot project with the AASA Center for Accountability Solutions to use Quality School Portfolio (QSP). This project provided software for staff to input and organize existing data, and to develop other assessment measures to fill existing gaps.

"We believe that both qualitative and quantitative data are essential," Barnes says. With this in mind, the district applied a hospital model for assessing its educational health. "We used quantitative measures, such as test score results, as indicators of academic health in the same way physicians use numbers, such as temperatures and blood pressure readings, as measures of physical health. We also used softer qualitative measures, such as the result of interviews with students, in the same way physicians ask questions during physical examinations."

Some of these softer qualitative measures are unique to Palisades. "Walk Through" data, a term coined by the district, are gathered by interviewing each student once each year using a faculty-developed protocol. (See the list of questions boxed on p. 21.) "The interview results give us qualitative data as to whether students know what we expect of them in writing, reading analysis and math; whether they know how their work is scored; and whether they know how to improve it," Barnes says. Responses are analyzed at the building level, thereby enabling faculty to assess whether students are learning what is expected. The data then are used to make necessary changes in curriculum and instruction.

As Palisades' data-driven decision-making efforts continue, its data-collection methods have expanded. Barnes notes districtwide assessments in kindergarten through eighth grade are the direct result of data analysis. The district currently is formalizing assessments in 9th through 12th grade.

The effort is producing results; Palisades School District students are scoring higher on standardized tests. For example, in 1998, Palisades High School students scored an average of 1270 on the Pennsylvania System of School Assessment (PSSA) reading test and 1250 on the mathematics test. (The state's "proficient" score is 1300.) By 2001,

the students' average scores increased to 1380 on both tests.

The district does not rely on just one data resource, however. "We use the state assessments in reading and math in grades 5, 8 and 11, and writing in grades 6 and 9," says Barnes. "While these are 'good' assessments... we were somewhat frustrated in the 1996–97 school year that, while these tests measured student performance, we did not receive any data that would help us improve performance."

The district subsequently adopted the New Standards Reference exams, which were administered for the first time in spring 1998 to students in grades 4, 8 and 10 in reading and mathematics. "These tests provide specific information by student, class and district for areas that need to be improved," says Barnes. "We have taken this data seriously and provided the appropriate training to prepare our teachers to use the data to improve instruction."

Barnes says the data indicated that students needed to work on writing conventions, reading analysis and interpretation, and math problem solving. So he focused the first year on writing, the second year on math problem solving and the third year on reading analysis and interpretation. "Focus means that each year we provide training and time for administrators and faculty to work on implementing changes in their instruction based on what they have learned in the focus area," says Barnes.

Faculty also have created quarterly assessments in math and language arts at each grade level to provide benchmark data to use for improvement. When students do not achieve on quarterly assessments, they participate in after-school and even summer-school tutoring sessions. The results are impressive. For example, in spring 1998, 33 percent of the high school students taking the New Standards exams for reading analysis and interpretation scored at or above the standards. In 2001, that figure was 64 percent. For mathematics problem solving, the number of high school students scoring at or above the standard increased from 18 percent to 43 percent.

Results also are evident in students' accomplishments after they graduate high school. They are entering better postsecondary institutions; students from Palisades High School's Class of 2001 now attend such prestigious schools as Boston University, The College of William and Mary, Franklin and Marshall College, Temple University and Le Cordon Bleu. And Barnes notes that the community is showing more interest in and support of students, staff and the district's efforts to help all students fulfill their potential.

Elementary Reading Analysis and Interpretation Walk Through Questions

Durham Nockamixon Elementary School, Palisades School District, Pa.

- Can you share a connection you have made with text this year?
- How did that connection help you understand the story?
- What clues do you use to make predictions when you read a story?
- What kinds of questions do you ask yourself before, during and after reading a book or story? Can you share a question you've written down?
- What do you do when you do not understand what you are reading? How would you help a friend who didn't understand what he was reading?

Accountability Plans

School districts have been mandated to improve student performance. Domenech, whose district is responsible for more than 158,000 students, shares his experience: "To blunt the criticism of a community that implied the schools constantly asked for more money but were never willing to be held accountable, we devised a plan that allowed for objective measurement of our performance and we agreed to be held accountable for our results, or lack of."

Fairfax County's plan includes a process for determining a biennial objective and measurable targets that are part of a system that provides each school with specific and measurable targets for student achievement. Rewards and sanctions apply to schools and students. For schools, the rewards include bonuses; the sanctions include reconstitution. For students, there are promotion and retention guidelines by subject and grade level. Students who fail to meet the benchmarks are required to attend remediation programs and summer school.

Implementing a full-scale accountability plan is not easy. "It is an education process and a change in culture," says Domenech. "We had the immediate support of the school board and the community. Getting the support of the administrators and staff was more difficult. Everyone had an excuse as to why objective measurement of our performance was not fair."

Armed with the right data and a full understanding of what the data show, superintendents can effect change as well as measure progress. Says Domenech, "The use of gain scores tended to neutralize the socioeconomic factors and did away with most objections. The reward system also helped, although the sanctions created a great deal of angst."

Ownership and Responsibility

It is important to get community ownership and buy-in at the front end of developing an accountability plan — a method by which districts, schools and students are evaluated and held responsible for performance. Stakeholders should have input into deciding what counts and what districts should measure. By including all stakeholders in these decisions from the start, school districts benefit from their support throughout the process.

All stakeholders take ownership and responsibility for our children's achievement. We are convinced that community engagement is necessary in order to progress.

— Inez P. Durham, superintendent, Plainfield (N.J.) Public Schools

In 1995, the Plainfield (N.J.) Board of Education adopted six goals focusing on school reform. Those goals included setting standards, identifying and establishing benchmarks, improving evaluation of personnel and providing skills development, and completing a community planning process that would result in a comprehensive district improvement plan.

The district spent the next two to three years laying the groundwork for standards-based reforms, according to Joshua P. Starr, Plainfield's director of accountability. Most of the efforts were aimed at building community engagement. District leaders explained to parents, business leaders, and other community members what the reforms

were and how the reforms would improve student achievement. They also listened closely to community concerns.

The district's efforts were effective: In 1998, voters approved on the first ballot a $33.9 million education referendum that provided the necessary resources for expanding the district's education reforms. That same year, the board adopted a specific goal to deal with reforms based on research. "This meant that resources had to be put into place to ensure the efficient, effective gathering and analysis of data," says Inez P. Durham, superintendent of the district, which serves more than 7,200 students. In 1999, the board established an office of accountability. "From 1995, it was clear that all stakeholders had a responsibility for student achievement and school reform — and would be accountable."

Plainfield is required by a court case to have a districtwide plan. The plan's acceptance and success is contingent upon support from all stakeholders. Therefore, members representing the community, administration, parents and other groups were given the opportunity to participate in the plan's development. The resulting plan, approved by the board, has been well-received.

"The plan is designed to promote local ownership and collective responsibility," Durham says. "It is locally driven and identifies the outcomes and indicators that the Plainfield community values and expects. The system is designed to sustain good practices, continual evaluation and continuous improvement based on reliable and comprehensive data. It is a system of rewards and consequences."

Plainfield's accountability plan is implemented throughout the district via its Leadership Innovation and Change Councils (LINCCs), which are site-based management teams that include representatives from administration, teaching staff, support staff, parents, community, business and corporations and, when appropriate, students.

In addition to a districtwide LINCC, each school has its own LINCC. The school-level LINCCs measure progress toward achieving six non-negotiable goals. There are six scoring guidelines for each goal. "It has been a challenge for all to become comfortable with following the procedures for collecting and reporting accountability data and to score utilizing rubrics," Durham says. The district is helping LINCC members overcome those obstacles with dry runs, inservice programs and workshops.

The plan has widespread support and interest. "All stakeholders take ownership and responsibility for our children's achievement," Durham says. "We are convinced that community engagement is necessary in order to progress." (See Chapter 3 for more about community engagement.)

Establishing Performance Targets

Four main sources provide helpful information when establishing performance targets. Superintendents can:

- Review relevant state and national performance standards.
- Discuss expectations with important stakeholder groups.
- Compare students' performance with that of an exemplary school or program.
- Compare students' performance with state and national averages.

Source: *At Your Fingertips: Using Everyday Data to Improve Schools, 1998*

A Closer Look

Phil Streifer
Associate Professor of Educational Leadership, University of Connecticut

What is the first thing superintendents should consider when they develop a data-collection program?

Data collection should start with the questions they most want to address. Ask: What data do I need to answer these questions? This will quickly lead to a list of the data needed — something I call a data audit.

An issue of concern always is "What will it cost to collect the data?" I encourage superintendents to consider the cost benefits of collecting data in terms of the value they will provide in answering their questions. In some cases, questions may need to be modified because the data will be too costly to collect. For example, surveying large groups of constituents can be time-consuming and costly. It may be appropriate to do so, but only after thoughtful review of whether it's absolutely necessary or whether some other sampling might be equally valuable.

I think it's also important to desensitize the annual reporting of high-profile data by having regular reports to the board, staff and parents on student performance covering a wide range of variables.

— Phil Streifer, associate professor of educational leadership, University of Connecticut

There are different types of data. How do you distinguish among them?

Data can be separated into three broad categories for analysis and interpretation: input, progress and outcome variables. Input variables are variables that students come to school with, such as their background, prelearning, socioeconomic status and so on. Input variables also can include teacher variables, such as their level of education or previous in-service training experiences. Process variables are those that currently are at play on the issue under consideration, such as the curriculum in use, instructional techniques and materials. The levels of teacher and parent participation in decision-making also are process variables. Outcome variables are the results or measures of both input and process variables, typically student tests, observation data and survey results.

A number of school districts do not have a districtwide accountability plan. Where should they begin?

I would start with the district goals and build an accountability plan around those issues. Second, I would make sure that there is a high degree of match between the data needed and the data collected. Generally, this issue of match is first measured by the data's reliability (ability to consistently yield the same result over time) and validity (the degree to which the data measure what they purport to measure). Finally, match is determined by the level of appropriateness of the data to your population.

What types of data are necessary to create an effective accountability plan?

I would focus first on district/board goals or mission-critical problems. Next, I would generate data that allow for longitudinal analyses — over several cohorts (groups of individuals having a statistical factor, such as grade level, race or age) if at all possible. Thus, if mastery tests are administered in the fall, I would look to a comparative assessment in the spring, or one that would allow for fall-to-fall analyses. Overall, longitudinal analyses yield the most useful information. Beyond this, I would ensure the data you have or are about to collect will provide you with the information needed. Poorly constructed surveys, for example, yield no useful information at all. Tests that are too easy or too hard also have limited utility.

Board, staff, parent and public support are essential. How can school administrators get community buy-in for such a plan?

I don't think you can get support after the fact — that is, when the results are in. Early on, we need to engage these folks in why these data are needed and in helping them to understand the data's limitations and value. I think it's also important to desensitize the annual reporting of high-profile data by having regular reports to the board, staff and parents on student performance covering a wide range of variables. With consistent, regular updates from the district, the once-a-year state report may not take on the degree of importance it sometimes does now. I have found all of these constituencies to be thoughtful and reasonable once we take the time to explain the complexities and how the data are used to gauge progress and design improvement.

Summary

Key points in Chapter 2 include:

- Districts should use multiple assessment and nonassessment measures when assessing student performance.
- Disaggregated data is a powerful tool to help superintendents identify which students are achieving, which students need additional assistance and how best to target limited resources.
- Methods for data collection vary; many superintendents start with the question: What do I want to know and what data will help answer this question?
- A districtwide accountability plan provides for objective measurement of performance and holds boards, superintendents, principals, teachers, parents, students and others accountable for results.

Chapter 3: Data, Public Engagement and Strategic Communications

- *What data matter most to your community?*
- *In what ways is the community involved in discussing data, such as test results, school safety reports and teacher quality ratings?*
- *How is community input on how to improve schools gathered?*
- *How do teachers, staff and board members communicate with parents in the district?*
- *How is jargon-free data reported to the community, both the successes and the challenges?*
- *Who are the most credible messengers in the district?*
- *How can the district build an effective working relationship with the media?*

Superintendents understand the importance of parent and community engagement, strategic communications and working with the media. They know that, unless they communicate clearly and honestly about data and what the data reveal about student learning, their efforts will fail and their credibility could be damaged irreparably.

"School improvement requires a constant conversation with our community," says Beaverton (Ore.) School District Superintendent Yvonne Katz. "The community's input informs our processes, procedures and what we do. I'm convinced I wouldn't be here if I didn't gather and use community input."

> *To depend on the local newspaper editor or reporter to do all of your public relations for you is like depending on the hospital orderly to do your open-heart surgery.*
>
> *— Brian Hale, member, Neb. School Boards Association*

Success in promoting and sustaining data-driven decision-making as a tool for school improvement depends on:

- Educating parents and community members about what different data convey and how to use data to measure the success of school-improvement efforts, budget decisions, teacher quality initiatives and other practices.
- Asking teachers, parents and community stakeholders what their concerns are for schools and what data they need to see to know schools are improving.

- Listening to the insights of these different stakeholders and reporting back to them how their input may shape decision-making.
- Sharing the district's successes and failures along the way.
- Speaking in clear, easy-to-understand language that is free of "educationese."
- Understanding that the public schools belong to the public, and school leaders need the public's permission to do the work they are charged with doing.

This chapter explores three cornerstones of effective communication: public engagement, strategic communications and media relations.

Public Engagement: Listening to Your Community

How do superintendents proactively involve their communities in understanding and asking informed questions about data? How do they determine which indicators matter most to various stakeholders — parents, taxpayers, teachers, business leaders, senior citizens and others? How do district leaders build support early on so that when controversial data are released, the public says, "How can we help?" rather than assigning blame or finding fault?

"What's really important is to clarify what the community's role is," says Superintendent Jane Hammond of Jefferson County (Colo.) Public Schools. "We gather input from the community and then we get together with educators to decide what we want to do to get the results the community wants."

The fundamental purpose of any public engagement initiative is to channel a community's concern, apathy or anger into informed and constructive action.

— Annenberg Institute for School Reform, Reasons for Hope, Voices for Change, 1998

Engaging the public begins with listening. It's not uncommon for an educator's view of success to differ significantly from the views of a taxpayer, parent or business leader. (See Communicating Data to the Public on page 32.) Yet each of these constituents has a stake in public schools.

One of the most effective ways superintendents and district staff can engage their public is by asking: What would you need to see that would indicate our schools are improving? Other questions include: How do we as a community define success? What elements are important in defining student success? How do we as a community work together to ensure success for our young people? The answers to these questions not only give superintendents a clearer sense of the public's priorities, but they also identify what data are most meaningful.

"When asked what their priorities are for spending money, our local community said 'we want a quality teacher in every classroom, including giving teachers the coaching they need to improve,'" Hammond says. "Professional development emerged as a higher priority than reducing class sizes. I have never before seen the public be willing to support staff development."

The most effective strategies for community listening are face-to-face meetings, such as:

- **Focus groups,** typically involving 8 to 12 people. Some focus groups are conducted with a cross-section of people representing the community or a specific subgroup, such as parents with children in public schools or recent high school graduates. A skilled, neutral moderator leads the discussion using a script and predetermined questions. The moderator listens for key themes, new ideas, differences of opinion and common ground.
- **Community forums/town hall meetings,** which may attract anywhere from 60 to 200 people. Typically, these meetings focus on one issue or pose a question such as, "What should students know and be able to do?" or "What does a good school look like?" The information gathered at the forum can be used to help inform the district's strategic-planning process, goal-setting or data-gathering efforts.

> *If you don't listen to your community, you may make some assumptions that you are meeting their needs, but you are not. I find public engagement makes our decision-making easier, otherwise you are just guessing what the public wants.*
>
> *— Jane Hammond, superintendent, Jefferson County (Colo.) Public Schools*

- **A study circle** involving parents, educators, clergy, students and other publics. Together, they use dialogue to arrive at a decision about an issue or a problem. A study circle typically is made up of 10–15 people who meet weekly for two hours over four weeks. A facilitator leads the discussion, often drawing from a discussion guide shared with participants. During the final session, the group decides how to address the issue and offers solutions.
- **High-level advisory committees or superintendent leadership councils** made up of a cross-section of business people and community leaders who periodically meet with the district superintendent. These committees offer guidance on key issues, provide a heads-up about what they are hearing in the community and help brainstorm alternative methods of public engagement. The councils can be issue-specific, addressing an issue such as how to win support for an upcoming bond issue, or they can be more general and focus on broadly defined areas such as leadership.

As school leaders begin to implement these strategies, the challenge becomes how well they connect their work to the priorities of the community. Lackluster public engagement efforts can result in better packaging of more of the same rather than increasing student learning by using good data, gathering community input and making strategic decisions based on both.

> *I don't think you'll survive without engaging your public. The public has to be in public education.*
>
> *—Yvonne Katz, superintendent, Beaverton (Ore.) School District*

Engaging the Public in Strategic Planning

Rochester (N.Y.) City School District

Since Superintendent Clifford Janey arrived in Rochester, N.Y., in 1995, his work has been guided by a simple but powerful idea: If community members and educators have a shared understanding of what schools should do, they can work together to make that happen. Realizing the promise of that idea has not been easy, but the payoff has been enormous for the district's nearly 37,000 students.

At the start, Janey found a community demoralized by a history of low achievement. Experiment after experiment had been tried, but no "silver bullet" of school reform had pulled the community together to improve schools. Janey believed that Rochester was "idea-rich and focus-poor."

To help build a common understanding of what the community wanted from its schools and how that vision could be made a reality, Janey invited the community to help set specific, measurable goals for schools. He met with scores of Rochester residents and community leaders to learn their priorities for the district.

Next, Janey worked with the board of education and district staff to formulate a set of performance benchmarks — goals for the district to meet by 1999 — based on the public's concerns. Detailed in the plan were 40 specific indicators of success in the four major areas that community members had highlighted:

- Student achievement and citizenship
- Safe and supportive schools
- Community-school partnerships
- District accountability

But the community's participation didn't stop there. As part of this plan, the district secured commitments from community partners, including city and county government, social service agencies, colleges and universities and the private sector. A coalition of local groups sponsored an annual event to chart progress, raise awareness about these efforts and share information on district performance.

During the next couple of years, Rochester made progress toward nearly all of the benchmarks, and public sentiment toward the district improved. When Janey decided it was time to revisit the district's strategic plan, he stuck with the strategy of community involvement that had worked in the past.

To assess whether the original benchmarks were still relevant, the school conducted focus groups and interviews with more than 200 teachers, administrators, parents, civic leaders, employers, religious leaders and local politicians in 1997. Community members voiced support for the benchmarking initiative, but they said the original benchmarks were not ambitious enough, not streamlined enough and not focused enough on core academic skills.

Rochester education leaders spent much of the next few years processing this feedback, retooling the strategic plan and gauging the district's progress. The district also conducted public opinion surveys to evaluate the attitudes of parents, students and school staff about district efforts.

Based largely on community input, the district unveiled revised benchmarks in the 2000–01 school year. District officials had cut the number of benchmarks and honed their focus. These revised benchmarks revolve around two goals:

- All students will meet high standards in reading, writing, mathematics, science and social studies.
- All students will graduate prepared for civic participation, higher education and the world of work.

Buttressing these goals are two new, specific benchmarks that describe the progress the district is expected to make between the 1999–2000 and 2004–05 school years:

- Within a given group of students who enter high school together in ninth grade, the percentage of students receiving a diploma within four years will increase from 44 percent to 90 percent.
- The percentage of students receiving a Regents diploma with honors (indicating those students passed the New York Regents exams with an average of 90 percent or higher) within four years will increase from 3 percent to 15 percent.

Rather than erecting walls to shut out the community, Janey and other Rochester school officials repeatedly invited the public to join in the work of strengthening education. The results have been sweeping changes and steady improvements. The district has not yet met all its goals, but it has made progress toward every benchmark set by the community — and it remains committed to community engagement as a way of guaranteeing that public schools serve the public.

Excerpted from Danforth Foundation Report, Rochester City School District, N.Y., 2001.

Crafting a Communications Plan

The following are vital elements of a communications plan:

- **Messages**: What do we hope to achieve as a result of communicating?
- **Audiences**: With whom do we want to communicate?
- **Results**: What measurable effect do we hope to achieve?
- **Medium**: What communications method do we want to employ?
- **Timeline**: By what date do we want to be successful?
- **Expense**: How much are we willing to spend on communications?
- **District and school staff**: Who will be responsible for successful communications?

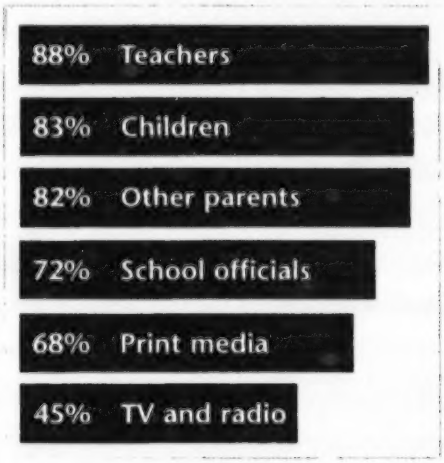
Engaging Business Leaders

Who knows a community better than the community itself? The Florida Chamber of Commerce is exploring new ways of listening to its community. One idea is to use volunteers as "listening posts" who keep their ears close to the ground. Bus drivers, hairdressers and others in the community could make it their job to pick up rumors circulating about the school district. When needed, they could stop the rumor before it can spread by offering the "real story" about student achievement, teacher recruitment, a bond issue or whatever the hot-button topic might be. These "listening posts" could also be convened periodically to discuss issues as a group or report to each other as needed.

Who Has Credibility in Your District?

Too often, superintendents count on the media to share district news and information with the public. While the media play an important role, surveys show teachers and other staff members have more clout with parents seeking information.

A 1996 survey conducted by the Denver-based Education Commission of the States shows teachers have the most credibility among parents. Here's how the survey ranked who parents rely on "heavily" or "somewhat heavily" as sources of information about education issues:



Source: *Listen, Discuss, and Act: Parents' and Teachers' Views on Education Reform, 1996*

Communicating Data to the Public

An effective way to build public support and increase community confidence in public schools is to show the public how schools are being held accountable for results. Sharing data in easy-to-read charts and short, jargon-free reports helps deepen community understanding of the issues facing public education.

A common concern voiced by superintendents is that the community reads limited coverage in the local newspaper about its school district or that reporters only cover the "bad" news. But too often educators make the mistake of placing too much stock in media reports. Polls show parents most often get their information from teachers, the principal, other parents and their children. Districts play an important role in disseminating factual, timely information to parents about student achievement — the information parents care about most.

> *If we are interested in community building, then we, along with members of the proposed community, are going to have to invent our own practice of community. Despite the difficulties, if we are successful, our community will not be counterfeit but real.*
>
> *— Thomas Sergiovanni, Building Community in Schools, 1994*

Increasingly, districts are reporting information directly to their communities with the help of a school report card or annual performance report. Many successful districts use the report to guide discussions on performance and education priorities at school forums, parent meetings, staff meetings and board meetings. Training teachers and principals to help facilitate these conversations ensures everyone is focused on the data, what the data reveal about performance and how to improve instruction in the classroom.

"We have spent countless hours and thousands of dollars training administrators on how to use data," Katz says. "We know who is doing well in what area and who is not doing so well. We talk about the data and don't push the numbers under the rug. You cannot be a smoke and mirrors superintendent anymore in this country. People are very smart about wanting to see the evidence."

A critical first step of reporting data to the community is finding out which data different stakeholders care about most. Often there are discrepancies among constituencies. For example, educators may want to see more demographic data, while parents tend to rank school safety and achievement high on their list.

A national research project published in *Education Week* in 1999 (see Appendix A) asked parents, taxpayers and teachers across the country what indicators they would use to hold their schools accountable. Here is a sample of how parents, taxpayers and educators ranked their top five indicators:

Parents	Taxpayers	Educators
School safety	School safety	School safety
Teacher qualifications	Teacher qualifications	Class size
Class size	Graduation rates	Teacher qualifications
Graduation rates	Dropout rates	Graduation rates
Dropout rates	Percentage of students promoted to the next grade	Per-pupil spending

Websites as a Communications Tool

More and more school districts are using the Internet as a tool to communicate district data to their communities. Achievement data for students in Orange County (Fla.) Public Schools, Palisades (Pa.) School District and Plano (Texas) Independent School District are only a click away for parents, business leaders, teachers and anyone else who has access to the World Wide Web.

Orange County's website — *www.ocps.k12.fl.us* — boasts detailed school-by-school enrollment data, scores from state and voluntary tests, an online parents guide and detailed frameworks of higher achievement in all subjects at every age level.

As comprehensive is Palisades School District's site — *www.palisadessd.org* — which posts results by grade and school for the standards in reading, writing, mathematical skills, mathematical concepts and problem solving, as well as the percentages of graduates attending two- and four-year colleges.

District data also is a main highlight of the Plano School District website — *www.pisd.edu.* The district's Department of Research, Assessment and Evaluation posts assessment results, the yearly district accountability report and detailed explanations of all tests administered in the county.

Graphical Representation

"Graphics reveal data," notes Edward R. Tufte in *The Visual Display of Information*. According to Tufte, graphics communicate complex ideas with clarity, precision and efficiency. Graphical displays should:

- show the data
- induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production or something else
- avoid distorting what the data have to say
- present many numbers in a small space
- make large data sets coherent
- encourage the eye to compare different pieces of data
- reveal the data at several levels of detail, from a broad overview to the fine structure
- serve a reasonably clear purpose: description, exploration, tabulation or decoration
- be closely integrated with the statistical and verbal descriptions of a data set

Strategic Communications: Getting the Most for Your Effort

Districts have a wealth of data to share with their communities: dropout rates, test scores, attendance rates, school safety data, budget figures and other information. One of the biggest challenges facing districts is determining where to begin. What information is most useful to communicate? Superintendents do not have the time or the resources to communicate with everyone about all of the district's initiatives. That is why it is important to be strategic. Simply said: Set priorities, gather input early on, plan ahead, be proactive and always evaluate the results of communication efforts.

Because so many different initiatives and programs compete for attention, it can be challenging for superintendents to keep their communication efforts focused on improving student performance. District leaders who have turned around poorly performing schools say they worked hard to keep their communication with staff, parents and the public focused on achievement.

For example, if a district's emphasis is on helping all students meet standards, school visitors should be greeted with student work that meets the standard, scoring guidelines outlining academic expectations, and students who can explain what they need to know and be able to do

User-Friendly Report Cards

Here are some helpful guidelines to ensure that a school's report card is read and used.

- Keep school report cards short, such as a six-panel brochure. Have a more detailed version available for people who want more data.
- Add short narrative descriptions. School data are not self-explanatory to nonexperts.
- Advise parents and others how they can use the data. It's not obvious to most.
- Spend as much time working on distribution as on production. Research shows that even most teachers say they've never seen district report cards.

Source: *Reporting Results: What the Public Wants to Know About Schools, 1999*

at each grade level. Schools can illustrate the progress students are making on tests that measure whether they are meeting the standards with the help of easy-to-read bar graphs and charts that help explain what data the district is using to measure progress. This approach helps parents and community members understand how these different efforts are connected. It also shows them that they are receiving important and timely information on school quality.

Taking the Pulse of the Community

A poll is a structured method to determine the level of support or intensity of opinion on an issue, product or philosophy. Public opinion polling is one way to gauge the community's views on education issues. For example, educators can use a poll to quantify the level of support for a proposed ballot issue or to test different options for a new start time for school. Results of polling should be used to inform decision-making, not as the sole basis for decisions.

When considering whether to use polling, superintendents should think about the resources required (it can be expensive), the importance of the information to the decision-making process and the specific information needed so they'll know more than they did before they tested the waters.

Here are some key points to remember when writing a poll:

- The way a question is asked can determine the answer.
- It's important to look for obvious questions that are not asked by the pollster.
- Respondents are more likely to tell pollsters they support plans favoring change, even if they do not fully understand how the proposed change will affect them.
- Not all pollsters make sure respondents know enough about the subject of the poll questions to give meaningful answers.
- There are many diverse publics, as well as variety in thinking among specific subgroups of a given population. Superintendents must research what each of these constituencies thinks, feels and wants before making major decisions.

School Ambassadors

The National School Public Relations Association says the following school employees, in order, are best known to the public:

- School secretaries
- Custodians
- Bus drivers
- School nurses
- Teachers
- Principals
- Superintendents
- School board members

Think of each employee as a school ambassador to the community. Provide them with communication skills and training. They are among the district's most important messengers.

Working with the Media: Making Sure Your Message Is Heard

Think back to the last interview you did with a reporter. How did what you said during the interview translate to the printed page or television? Was your message heard? Working with the media can be challenging, especially when you are trying to communicate complex data and information that doesn't neatly fit into a 10-second sound bite.

Before any media interview, know the opposing side's point of view as well as you know your own. Decide what the goals are for the interview. For example, do you want to raise awareness about trend data that reveal improvement in student test scores? Are you sharing district strategies for turning around low-performing schools? Identify your audiences and which messages resonate best with them. Stay positive, succinct, solution-driven and in control of the interview.

The public schools really are the public's schools. If they are given the impression that they are welcome to participate only if they can do something educators think worthwhile, this puts the cart before the horse (i.e., treats citizens as a means) and disconnects the public from schools.

— David Mathews, Is There a Public for Public Schools?, 1996

For more on media interview techniques and related materials, see Appendix B on page 54.

Summary

Key points in Chapter 3 include:

- Teachers, principals, district staff and the community should be involved in gathering, analyzing and discussing data.
- Success in promoting data-driven school improvement depends on educating parents and community members about what information different data convey.
- Understanding what data the community uses to measure whether schools are improving helps superintendents avoid major disconnects in communicating information with taxpayers, business leaders, parents and other community members.
- The most effective strategy for listening to community concerns is a face-to-face meeting with different or multiple constituencies, such as a focus group, a community forum, a study circle or a superintendent leadership council.
- Crafting a comprehensive strategic communications plan helps superintendents identify key messages, audiences, results, effective tools (e.g., web-based data charts) and timelines.

Chapter 4: Strategies for Success

- *How can the school district's culture shift to one that encourages using data to drive decisions?*
- *What roles should a superintendent, school board members, central office staff, principals, teachers and others play in collecting, processing, interpreting and using data?*
- *How will key players be trained to effectively participate in data-driven decision-making?*
- *Is the data system being built able to foster continuous improvement in the school district?*
- *What can be learned from other successful districts?*

Capitalizing on recent advances in technology and research regarding educational improvement, superintendents nationwide have developed countless strategies for using data to drive decisions at the district and school levels. Whether they are data experts or novices, however, they probably could be doing more to make this invaluable resource — data — work for them.

How? Listen to the stories of superintendents and other education leaders from across the country who have been using data to drive decision-making. More than anything else, their experiences underscore the importance of team building. After all, leaders are only as good as their teams.

Superintendents illustrate the power of building a data-friendly culture, ensuring that school board members and staff understand their roles and responsibilities, providing the training needed to foster new data skills and establishing a system focused on continuous improvement.

This is the critical point of data: It's not necessarily the answers that are most important; it's the discussion that occurs and the questions that are asked because of the data.

— Karen Bates, superintendent, Lake Washington (Wash.) School District

Changing the Culture

Data traditionally have not been a major factor in the ways schools and districts make decisions. The intuition of principals and teachers, advocacy by parents and political interests often have guided decision-making. But all that is changing.

The call for data-based accountability, trumpeted first by state education leaders, has been met with skepticism by many of the people in schools who are being asked to collect and use data. Teachers and principals sometimes react initially with fear, distrust and resistance. Their first questions, if they dare to ask, concern how the data will be used against them.

"Teachers are afraid of data because they think their jobs may hang in the balance, based on how their students are doing. Principals are worried about where they will get the time to analyze data," says Superintendent Ray Yeagley, who has spent years easing the data-driven fears of educators in the Rochester (N.H.) School District. "The superintendent has to help people see the global picture about what data can and can't do. I need to help my principals find the time to make this a priority. I need to reassure my teachers about how it will and won't be used, so they feel it won't be used unfairly."

To overcome these hurdles, education leaders recommend:

- Taking every opportunity to show principals and teachers that data are not being used to "get" them, but to improve student learning. Tom Glenn, superintendent of the Leander (Texas) Independent School District, says he used every outlet he could find — including the district newsletter, meetings, workshops and private conversations — to get that message out. "We still encounter resistance, from time to time, to laying the data on the table. But that happens less and less as our culture helps people understand that we're not asking these questions to harm people," he explains. "You have to act appropriately with the data and make sure people understand: We're working on the system."

- Helping district faculty and staff understand that using data, much of which already is public, is a shared responsibility. The Poway (Calif.) Unified School District has adopted the philosophy that it is made up of "professional learning communities," says Ray Wilson, director of learning support services. "We all work together for the common good. If one of us has poor test scores, it's our job as a department to figure out why and help that person get test scores up," he says. To help people become more comfortable and familiar with data, Wilson's department devised a scavenger hunt for the district's part-time school-based data staff. "They had to create a school profile that included teacher credentialling rates, mobility rates, test data and the number of years that the teachers at each grade level had been teaching," he says. "All this information is available on the Internet. Many people were surprised how much information about their school, which they struggle every year to collect, is public."

The importance of data for administrators, policymakers and teachers in the classroom — to be able to break data down and know where strengths and weaknesses reside — is crucial if you want to make any kind of improvement.

— Monte Moses, superintendent, Cherry Creek (Colo.) School District

Collecting the Right Kinds of Data

Leander (Texas) Independent School District

The need for data has been felt acutely, even among school systems in Texas where the Texas Assessment of Academic Skills (TAAS) has set a national standard for data collection, says Tom Glenn, superintendent of the Leander (Texas) Independent School District.

In the early 1990s, as TAAS was taking hold, Glenn and other district officials realized that their teachers and principals needed something the state test did not provide: frequent updates on student progress that could be used to guide instruction and address problems throughout the school year.

Despite its strengths, TAAS tests students only once annually, near the end of each school year. Results are reported in the summer, when educators are powerless to address achievement shortfalls. What those shortfalls might be remains somewhat murky, because TAAS reports on student performance in terms of broad categories rather than specific skills.

So Leander began exploring an additional testing option. Principals and teachers worked together for two years to revise language arts and mathematics curricula, then worked for another year to help develop a test based on those curricula.

The resulting Student Profile System tests students from kindergarten through high school in language arts and mathematics three times a year — at the start of the school year, in the middle and at the end. Principals, teachers and students receive reports, including easy-to-understand charts that show specifically where students excel and where they need to focus more attention.

"The first time we used the test, on the first day of the school year, we had elementary students in tears," recalls Glenn. "They said, 'I'm in the fourth grade, and I'm taking the fourth-grade test at the beginning of the year — I don't know any of this stuff!' It took us a while to help students understand that they were not expected to know any of this stuff yet — that we were just trying to find out how much of it they did know, so we didn't waste time at the beginning of the year teaching them things they already knew."

Teachers and principals were concerned, too. "We promised them: 'We will never use this assessment to evaluate you; it is for your use,'" Glenn says. "We had to prove it over and over again. We told people that the system is the problem; individual people are not necessarily the problem. We called it 'failing forward' or 'learning from our mistakes' or 'working on the system' — we called it lots of different things. We had to help people trust and understand that, as we collected data and found things that weren't always positive, they were not going to be hung out to dry."

Glenn says the 13,200-student district continues to use the system because it:

- focuses attention on learning, not testing;
- generates data that can be used to improve education, not just categorize students and schools; and
- allows students, as well as teachers, to manage the learning process better.

Principals, teachers and students report that the system is helping them work more effectively than ever before to improve learning — which is the purpose of testing, Glenn notes. "Once people understand that you will not use data to beat them up," he says, "then they will help you collect that data and be very honest about it."

Ultimately, to shift the culture of your district to not only tolerate but embrace data, you must not rely on data so much that you discount the training, experience and expertise of the people who you want to use the data, says David Benson, superintendent of Blue Valley (Kan.) School District.

In the early stages of Blue Valley's data-collection efforts, a respected administrator, now a deputy superintendent, fumed visibly for several weeks before finding the words to voice his frustration, Benson recalls. "He came out of a meeting and said, 'Dave, you're ignoring my intuition. I feel this way about this — and because I feel this way, you have to listen to me.'" Benson says, "It was such an epiphany for me to understand the importance of that point: You cannot take a human institution and just crunch it to data points. You have to listen to people."

One of the primary responsibilities of a leader is to help people confront problems. The way you confront problems is you identify them, and the way you identify problems is by looking at data.

— Terry Grier, superintendent, Guilford (N.C.) County Schools

Benson listened to the administrator, as well as to other critics. As a result, the district's data system has been improved. Moreover, it has survived and thrived as principals and teachers throughout the district have made way for data in their work. Today, the 17,000-student district uses local, state and national test data in its accreditation process, school profiles and strategic planning. But that did not happen overnight.

"It's a gradual process of proof," says Benson. "If you can demonstrate that what you're doing can make a difference in the lives of the students we serve, then it will gain acceptance. If it is data for data's sake only, and is not related to our primary mission of providing an academic education to children in a safe and orderly climate, then it will not gain acceptance."

A Closer Look

Spence Korte

Superintendent, Milwaukee (Wis.) Public Schools

Why do school districts need to be able to make decisions based on data today?

We have a history of going after money for a hot new project and running it for three or four years, and then it becomes part of what we do. Nobody is really getting at the critical questions: We just spent over a billion dollars this year — is that money put in the right places? Is it getting results?

In Milwaukee, we've been building a sophisticated network to collect student information. Each of our schools gets a report on how their students are doing. It's pretty practical from a principal's point of view. For example, how many ninth graders are coming in below grade level, and do I need to change my hiring pattern so I have more remediation for kids coming into my school? The information is online. People in schools can access all their records 24 hours a day.

What has worked well for your district in terms of setting up a sound data system?

Driving our whole technology design and infrastructure is an ex-high school principal. He comes with 24 years of field experience in knowing what information has to look like to add value for schools. Instead of recruiting an information systems technician to manage this, we've gone the other way and drafted a practitioner. The result is that our data tend to be more user-friendly and more school-oriented than they might be otherwise. That's something to think about when you're out looking for an IT person. You can always surround that person with technicians, but if he or she doesn't know what schools need, the fit you get might not be what you want.

How important is data training for teachers, principals and other district employees?

It's absolutely critical. In retrospect, one of the things that we did right was take an existing building and set it up as a training center. We cycle people through every day.

All our best technology teachers are there. Almost all of them have a background in schools, so it isn't "techspeak" as much as it is, "When I was a teacher at such-and-such a school, this was a big problem for me. I bet you have that problem at your school. Let me show you how we solved it with technology." We have good credibility with the teachers.

> *Businesses don't keep data that's useless, that doesn't inform them of anything, yet in education we have data that just runs all over us. We have to target it and organize it in such a way that it informs us so that we can make better decisions.*
>
> *— David Benson, superintendent, Blue Valley (Kan.) School District*

We do our own training about 90 percent of the time. Sometimes we'll have a vendor contract where they may do the installation and 500 hours of training or something. But we don't rely heavily on vendors. In the technology world, the vendor can be on the top of the heap at the beginning of the year, and out of business at the end of the year. We want to figure out how we can institutionalize technology as a major part of the way we do business.

How do you accomplish that? Who needs to be involved in the process?

You need to start with the end users, and they need to be educated about what the district-level folks need to make those decisions. You've got to get buy-in at each of those points along the way.

You always go through that part where you're running the old system and you have a new system ready to go. Ten percent of the people are ready to dump the old system and go to the new system. You need to find a way to make it politically palatable to say, by a certain date, "We can't afford to run two systems. We don't have the people for it. How can we help you get to where you need to be?" It really does take a driver somewhere in the organization who understands that the discomfort quickly gives way to comfort if you do it well.

How do you get the teachers and principals to buy into data-driven decision-making?

You have to show how it adds value. And at some point, I just had to say, "I understand your problem, but we're going to do this. Get to it." Part of leadership is that, at some point, you have to be able to see where it's going and have the courage to stay with it until it actually works in all of your schools. A lot of people are not willing to pay the political price. You have to be willing.

Unraveling Roles and Responsibilities

The culture of a school district will not smile favorably on data-driven decision-making for long if the members of that culture continually step on each others' toes or fumble the ball when it's their turn to run with the data. That is why the superintendent must draw the game plan in clear, bold strokes — to help board members, district staff, principals and teachers understand their important roles in the data system.

There are no secrets to success. It is the result of preparation, hard work and learning from failure.

— Colin Powell, U.S. Secretary of State

"It all has to work in coordination," says Douglas Otto, superintendent of the Plano (Texas) Independent School District. "Everybody has to have the same vision of what we're doing and why. Everybody has to understand what kinds of data are important to collect and how they're used. From the school board and superintendent on down, there has to be that common sense of purpose."

The 47,000-student district's data efforts appear to be paying off. Plano educators monitor student performance on the Iowa Tests of Basic Skills, the Cognitive Abilities Test, the Texas Assessment of Basic Skills and the Scholastic Aptitude Test. The district also collects and reports data in areas such as staffing, spending and enrollment patterns to inform decision-making continually.

To keep such a data system humming along smoothly, Otto says, team players must understand their special roles and responsibilities:

- **Superintendent and School Board.** They share leadership of the district's data efforts but play significantly different roles. In Plano, the division of labor has been clear: The board adopts policies to govern the system; the superintendent manages daily operations. "The board made sure we had the appropriate policies in place to make sure we were going to collect data, analyze it and use it to improve instruction," says Otto. "Board leadership is extremely necessary."

  To make effective policy decisions, the board must understand data. For example, the board needs to know that some data trends are the result of a "common cause" (a regular feature of the school system, such as normal student attendance patterns) and some are the result of a "special cause" (an unusual circumstance, such

as a flu bug that causes many students to miss school on a big test day). Otherwise, the district might spend an inappropriate amount of time trying to solve a problem that was a fluke.

The superintendent's role, then, is to empower central office and school staff to use data as effectively as possible to meet the board's mandates. Max Riley, superintendent of the Lawrence Township (N.J.) Public Schools, says the superintendent should send staff a clear message: "This is not a 'gotcha.' I'm going to give you every tool I can think of to help you succeed."

- **District Staff**. Central office and other staff at the district level must be prepared to discard longstanding ways of doing business if data dictate that a new approach is needed. In 1996, for example, Plano brought in consultants to conduct a curriculum audit to compare district practices with established standards. Based on the audit, Plano revamped its curriculum management team and expanded its research and assessment team to help "make wise decisions about what data we're going to collect, who's going to collect it, who's going to analyze it, who's going to be trained, and how it gets put back into the curriculum and strategies used in the classroom,"says Otto.

> *Data-driven decision-making is not someplace we've arrived; it's still a journey and always will be. But it's a journey where people understand how you buy the ticket and get on the train. And if you're not on the train, you need to find another place to be, because this is the way we have to operate.*
>
> *— Yvonne Katz, superintendent, Beaverton (Ore.) School District*

- **School Site Councils**. In many districts, school-based management teams — often called councils or committees — are taking up data along with the other tools they use to help make decisions for their campuses. "We'd had site-based improvement committees in place for many years," Otto says, recalling the changes that followed Plano's curriculum audit. "All of a sudden, one of their chief roles was to monitor areas of improvement in school, make recommendations, work with staff, and use the same data that principals and teachers were getting so everyone was on the same wavelength."

- **Principals and Teachers**. Though principals bear ultimate responsibility for what happens in their schools, they must work with teachers to use data in ways that best serve their unique student populations and school needs. In Plano, principals receive assistance — and are held accountable — for this work. "Principals receive data training. It's not voluntary; it's mandatory. They have to know how to use data on their school-based improvement committees. It's part of their performance appraisal," says Otto. "Principals also need to play a monitoring role to make sure that teachers are implementing the curriculum, using effective strategies and improving student achievement."

Yvonne Katz, superintendent of the Beaverton (Ore.) School District, says data must be distributed across grade levels, so elementary school teachers know how to prepare their students for middle school level work, and high school principals know how well their incoming freshmen will be prepared to perform. "Everyone can see what the data are showing" in Beaverton, says Katz. "As you look at groups coming through, you can plan what your focus will need to be in future years, when the kids hit your level."

The Evolving State Role

As school districts become more sophisticated in their use of data, they are starting to look beyond their own borders to appreciate the helpful role that state departments of education can play. This outlook is reversing years of mistrust and resentment, begun when states started collecting data that district officials worried would be used against them. As local school systems have become more confident and comfortable with data-driven decision-making, they have looked to the states for data training and other forms of technical support.

Katz retains a unique perspective on the state role, based on her experiences as associate commissioner for general education of Texas in the early 1980s. "We had a tremendous training program in Texas, bringing in principals and vice principals to be trained for a whole week in data usage, then visiting campuses around the state," she says.

New York provides a different kind of support for districts. State assessment scores not only are distributed widely, but are broken down to allow comparisons among similar school districts, such as those that serve high percentages of students eligible for federal free or reduced-price lunches.

"Some fairly helpful comparisons can be made for follow-up for the purposes of instructional development for classroom teachers and principals," says Kevin McGuire, who served as a superintendent for 18 years before becoming director of the New York State Center for School Leadership.

"There are extraordinarily talented educators in every corner of the state. By linking people together, we think we can help everyone grow, the adults as well as the children," McGuire says. "For example, if people are having difficulty with students who are remedial in nature, they can talk to a similar school district that seems to be meeting the needs of similar students in a more effective way."

Who Does What?

Data-driven decision-making, especially in the early stages, demands that district leaders point the way. Superintendents and school boards both must play important but distinct roles.

The superintendent generally:

- Translates the board's vision for the school district into measurable goals based on data.
- Works with district faculty, staff, parents and other community stakeholders to craft plans for meeting goals by certain dates.
- Collects data to show clear, steady progress.
- Celebrates successes, evaluates shortcomings and revises plans for improvement based on data, along with the board.

The school board generally:

- Establishes a vision for the school district based on data showing what has been achieved so far and what progress is necessary.
- Spells out — for the superintendent and other employees and stakeholders — how district performance will be evaluated.
- Reviews relevant data to evaluate district progress toward identified goals.
- Revises goals and plans for improvement based on data.

Broad participation in improvement efforts serves to:

- Promote a high level of support for those efforts.
- Generate sound solutions by expanding the discussion.
- Motivate participants and their associates.
- Increase the likelihood that the effort will lead to constructive action.
- Prepare participants for their role in implementing improvements.
- Increase ownership of and commitment to specific strategies.
- Empower important stakeholder groups.
- Foster lasting, rather than temporary, change.

Source: *At Your Fingertips: Using Everyday Data to Improve Schools, 1998*

Training the Players

Superintendents know that data-driven decision-making requires new knowledge and skills. In a 2000 AASA membership survey, superintendents overwhelmingly called for training on using data. They also knew their staffs needed a crash course in collecting and analyzing data, using data-processing technology, and operating the decision support system.

"I can sit up here in the superintendent's office and look at the data and issue directives, but then people don't understand what I'm doing or why I'm doing it," says Glenn. "You've got to empower people to use data. They'll help you identify problems — and often, through teamwork and looking at other ways of doing things, they will come up with solutions."

To help schools use Leander's new Student Profile System, which generates data on student progress throughout the year, the district provided teachers with lots of training, much of which directly involved them in helping develop the district's student profile test. A specially trained "data group" gathered data and reported it back to schools in user-friendly formats. Principals received training in helping teachers use data individually, in grade-level teams and as a school. "We did a lot of modeling with people," says Glenn. "I met with principals three or four times a year on their campuses to talk about their data: What's going on? Where are the peaks? Where are the valleys? What are they doing about the valleys?"

But Glenn does not advocate trying to make a data technician of every school employee. More important is training that emphasizes the conceptual underpinnings of data-driven decision-making — the core principles of how educators can use data to improve education.

"I can hire all kinds of people to come in and help us do the grunt work of collecting the data, putting it into charts and those kinds of things," says Glenn. "But as many people as possible in the system have to understand the philosophical basis of what you're trying to accomplish. Sometimes that's where we fail in education — in not helping people understand what we're trying to accomplish with all this paperwork we're asking them to do."

Implementation Models

Depending on what type of training is needed, superintendents might want to explore various ways of providing training. Should an outside vendor be hired to train staff, or should this be handled internally? Should one person spearhead the effort? Or would it be best to build a team?

Only you can answer such questions for your district. But successful superintendents and other education leaders have learned the following lessons:

- Not all employees need to receive training, but employees at all levels need to learn about data-driven decision-making. This helps build buy-in at all levels and ensures that the system works the way it should.

- Perhaps because data can be intimidating at first, districts often rely too heavily on outside consultants. The result can be generic training that is poorly matched to the specific needs or problems of a district. If a data effort is to be sustained over the long term, the district must cultivate in-house trainers who can help colleagues use the local data system.
- Actual district data should be used in training only when appropriate. If training focuses on data analysis, then using local data can provide a compelling context for participants. But if training is intended to help participants master new data software, local data can be a distraction.

When in doubt, remember: Data also can help tailor training to the unique needs of a district. Consider the technology self-assessment used by teachers in Blue Valley. Teachers complete a 43-item questionnaire to determine how they use technology and how they might use it better. The district uses that data to design professional development in technology. "Because we have used data, we have targeted inservice to specific, identified needs, rather than just using broad-brush technology inservice," says Superintendent David Benson.

The return on investment for data training is incalculable. "No matter whether you're a huge district or a very small district, if teachers are trained and have some knowledge of how to collect and analyze data, they can do some remarkable things in the classroom — without needing some decision from on high passed down telling them what to do," says Otto.

Creating a System for Continuous Improvement

Increasingly, leading school districts are using data-driven decision-making to ensure continuous improvement. They do so by moving beyond the initial work of assessing their own schools' performance, comparing thos schools against each other and monitoring trends over time. These districts look beyond their borders — to benchmark their schools' performance against that of other top-performing schools across the country.

Benchmarking is more than comparing test scores. Done well, benchmarking helps districts learn what it takes to be effective, how well they are using key strategies, where improvements are possible or necessary, and how they can learn from the best practices of other successful districts.

> *Meaningful school reform is probably more about using data effectively than about any other tool you can use.*
>
> *— Douglas Otto, superintendent, Plano (Texas) Independent School District*

A recognized leader in district benchmarking practice is the Western States Benchmarking Consortium. Founded in 1997, when a group of education leaders from high-achieving districts gathered to devise strategies for improvement, the consortium continually has brought together superintendents and others from member districts to develop research-based benchmarks for district success.

Looking for Value Added

Plainville (Conn.) School District

In the three years he headed the Plainville (Conn.) School District, then-Superintendent Max Riley raised student scores on Connecticut state exams to record levels — but he didn't do it alone. Riley recruited a "stat jock" from Central Connecticut State University to help principals and teachers use data for improvement.

James Conway, a psychology researcher and professor, was contracted by the district to "act as our coach for thinking about data," says Riley. Conway combed through reams of available data and analyzed performance trends over time and differences among schools. Then the researcher made himself available for confidential consultations with principals about their schools' data.

"I wanted principals to have access to someone with whom they could have conversations without necessarily having to go through the superintendent," Riley says. "It was understood from square one that these were confidential conversations and that Jim was just there to help principals in whatever they wanted to do, as long as it was focused on data and student learning."

Providing that sense of security made a difference. Principals latched onto Conway. They called with questions. They explored the data. They started seeing their schools in new ways.

For example, most people in Plainville traditionally had focused on raw test scores — and ignored relevant data about the student population — in evaluating the success of the district's three elementary schools. The school that served mainly children of white-collar parents routinely earned top marks. Two other schools, both of which served children of comparatively low-income families, fared less well.

But Conway toppled those perceptions with a value-added analysis. Essentially, Conway collected data on how well students performed when they entered each school, then examined how much progress that school enabled students to make. According to this analysis, the two schools with the lowest test scores added value to children's education at double the rate of the school with the highest test scores.

"Our highest-performing school was underperforming in terms of moving kids along," says Riley. "It sent shock waves through the organization. It turned everything upside-down in terms of people's mythological understanding about who's doing a good job." The value-added analysis also helped the principals at all three schools better understand where they were providing effective instruction and where they needed to work harder, he adds.

Now superintendent of the Lawrence Township (N.J.) Public Schools, Riley is setting up a similar system. Working with a researcher from a nearby university, Riley encourages principals to sift through data to see how they might increase their value added for students.

Working with college and university researchers can be particularly advantageous for relatively small districts like Plainville and Lawrence because districts can pay relatively little and get data services tailor-made to meet their needs. "Of course, the board loves it, because they feel like they're making focused, informed decisions about how to spend the money," says Riley. "Data also give principals the ammunition to come in at budget time and say, 'Look, it's your own darn data system showing where I need help. Now, I need help.'"

Field-testing those benchmarks during the 2000–01 school year, the consortium's seven member districts conducted self-assessments and shared results and insights. Now, member districts are using the benchmarks in everything they do, from setting goals and strategic planning to designing professional development and establishing accountability systems.

"In Plano, we are developing strategies for our school-based improvement committees to use the benchmarks to drive improvements in buildings," says Otto, whose district has been at the forefront of the consortium's work. "One of our weaknesses is that we're still not at the point where every teacher is using the data to improve instruction. We know that from our own observation and from talking with groups of principals and curriculum coordinators. That tells us that more training is needed."

How does it work? Based on recent research showing links between specific organizational policies and student achievement increases, the consortium has adopted four strategic areas of focus for benchmarking: student learning, capacity development, learning community development and data-driven decision-making.

Under each benchmark, a district's performance shows it to be at one of four stages of development: emergent, islands, integrated or exemplary. For example, the consortium has developed a data-driven decision-making benchmark for "relating investments, outcomes and improvement strategies." A district with "emergent" performance in this area collects data that are not maintained consistently over time and are not linked well enough to key outcomes to inform critical decisions. By contrast, the data needs of an "exemplary" district are clearly articulated and met in all stages of planning and implementation.

For each stage of development, the benchmarks include "behavioral indicators" (beliefs and actions evident in the system) and "support indicators" (things that support desired behaviors, such as professional development, policies and resources). These indicators not only let districts know how well they are doing, but also give them sound, research-proven ideas about how they can do better.

The process of developing the consortium's benchmarks has been more valuable, in some ways, than the benchmarks themselves. "It really generates a lot of professional opportunities," says Otto. "Having superintendents sitting around the table talking about these benchmarks — what we're doing and the strategies we're employing — really raises the level of conversation with regard to school improvement."

"The consortium holds great promise for us in terms of continuous improvement based on objective standards," agrees Benson, whose Blue Valley School District also participates in benchmarking. "You want to make continuous improvement in those areas where you can say objectively: 'This will make a difference for kids.'"

Benchmarks for School District Success

The Western States Benchmarking Consortium's benchmarks for school district performance allow a district's performance to be judged to be at the "emergent," "islands," "integrated" or "exemplary" stage of development. The table below describes indicators at different levels of performance for how well educators use data to personalize education or students and profile and monitor student performance.

Data-Driven Decision-Making: Using Information to Improve Instructional Practice

Emergent	Islands	Integrated	Exemplary
Data for Personalization The instructional approach is "one-size-fits-all," with underperforming and accelerated students "pulled out." As a result, there is little or no integration among remedial, accelerated and ongoing instruction. The concept of personalized instruction for all students based upon individualized performance data is foreign.	**Data for Personalization** Some schools provide examples of new approaches to accelerated or extended learning that are driven directly by examination of data.	**Data for Personalization** Evidence shows that the programmatic use of data in most areas such as accelerated and extended learning programs flows directly from examinations of performance data.	**Data for Personalization** Teachers routinely use performance data to truly personalize learning for all students.
Profiling and Monitoring Student Performance The district has not organized a formal student performance database. As a result, schools are left to their own devices to track performance over time. Teachers have great difficulty in determining the peform-ance level of students who move from school to school. Traditional grade-based report cards provide parents with information on student progress.	**Profiling and Monitoring Student Performance** The student performance database is still nonexistent, but more people are demanding that it be designed and implemented to improve curriculum and instruction. Schools are struggling with the inadequacy of the performance information base regarding timeliness, validity, reliability and comprehensiveness. The formal report card is still grade-based and remains the primary mode of communication with parents regarding student progress.	**Profiling and Monitoring Student Performance** The district provides a profile of student performance for each school. All schools use these profiles to set annual and longer range improvement targets. Student progress reporting is based on a continuum of progress in achieving well-defined content and performance standards. More schools are providing parents with specific suggestions regarding techniques for family reinforcement of these standards.	**Profiling and Monitoring Student Performance** Data are aggregated/disaggregated to classroom/school/district levels to determine necessary improvements in instructional practice. Heavy evidence of reliance on student performance data from multiple sources exists. The system maintains a performance profile for every student, integrating all information about the student's performance over time. Parents receive frequent progress reports of growth on the standards continuum, accompanied by suggestions for home reinforcement.

Source: *Western States Benchmarking Consortium*

The following school district performance benchmarks developed by the Western States Benchmarking Consortium describe indicators of district success in four major areas of educational performance.

Student Learning

- Ensuring learning for all students
- Integrating standards
- Incorporating innovative practice
- Integrating technology
- Developing a coherent curriculum

Capacity Development

- Expanding organizational effectiveness
- Adopting a curriculum management system
- Promoting innovation
- Improving professional/organizational learning

Learning Community Development

- Understanding and using state academic results
- Providing community-based learning opportunities
- Building community partnerships
- Building community development

Data-Driven Decision-Making

- Using a variety of data effectively
- Using information to improve instructional practice
- Using data to affect student performance
- Relating investments, outcomes and improvement strategies

Danger Zones

Superintendents charging into the unfamiliar territory of data-driven decision-making sometimes see the edge of the cliff only just before they reach it. Here are some lessons learned by district leaders who have been there:

- Don't rush headlong down the path to collect data and enforce accountability before bringing on board all the people needed to make the new system work. Talk. Listen. Build consensus about what is most important to do. Otherwise, you might find yourself out in front — with no one behind you.
- Don't fish blindly for meaning in data. If you do not know what questions need to be asked — before you even collect the data — you are not likely to find the answers you need.
- Don't bombard people with data for its own sake. Don't report it just because it is available. Stick with data points that can drive decisions for improvement.
- Don't lose track of what is most important — such as key indicators of student learning progress. If you place equal priority on many data points, some of which might have little to do with your district's core mission, then your team will not know where to focus its energy.
- Don't forget to draw the "big picture" for the people collecting, interpreting and using data. They need to understand why they are being asked to do this and what it all means. Explain it again and again and again.

Summary

Key points in Chapter 4 include:

- Successful data-driven decision-making requires a shift in the culture of a school district that encourages the use and analysis of data without fear of reprisal.
- The superintendent, school board members, principals and teachers must be clear on the purposes and goals of data collection and analysis.
- To help educators use data effectively, it is important to provide training and assistance, because data-driven decision-making requires new knowledge and skills.
- School districts using data-driven decision-making ensure continuous improvement by benchmarking their schools' performance against that of other top-performing schools across the country; benchmarking helps districts learn what it takes to be effective.

Appendix A: Accountability Measures

Parents, taxpayers and educators were asked to rate the following items in importance for school accountability.

Category	Parents	Taxpayers	Educators
School safety	9.6	9.4	9.3
Teacher qualifications	9.3	9.2	8.3
Class size	8.9	7.9	8.8
Graduation rates	8.7	8.2	8.3
Dropout rates	8.3	8.1	7.4
Statewide test scores	8.2	8.0	7.1
Parental satisfaction survey data	8.1	8.0	7.0
SAT/ACT scores	8.1	7.9	6.9
Percent of students promoted to next grade	8.0	8.1	7.0
Course offerings	7.8	7.9	7.3
Attendance rates	7.8	8.0	7.6
Per-pupil spending	7.6	7.6	8.0
Student satisfaction survey data	7.5	7.0	7.1
Teacher salaries	7.3	7.8	7.6
Hours of homework per week	7.2	7.3	6.3
Number of students	7.2	7.2	6.7
Percent of students who go on to a four-year college	7.0	6.9	6.8
Percent of students with an "A" or a "B" average	7.0	6.5	5.8
Number of students per computer	6.9	6.4	6.1
Percent of parents who attend parent-teacher conferences	6.4	6.6	6.3
Demographics of students	4.5	4.6	5.0

Source: *Reporting Results: What the Public Wants to Know, 1999*

Appendix B: Working with the Media

Media Dos and Don'ts on Data

- **Do** make sure your district has a comprehensive communications plan that addresses the release of potentially controversial data such as test scores, dropout rates, teacher quality ratings, school safety reports and other indicators.
- **Don't** wait until the day test scores are released to deepen the media's understanding about what the tests measure, how the district will use the test scores and what the results tell parents and community members. This should be an ongoing process. Be proactive. Keep the media informed. Make an occasional courtesy call even when you don't have to.
- **Do** make sure staff is apprised of test results and other sensitive data before the media, so everyone is focused on the same messages. For example, if the state releases test scores one day before the scores are released publicly, hold meetings with teachers, principals and other district staff to inform them of the results.
- **Don't** hide data from reporters. It's public information.
- **Do** talk to the reporter first when inaccuracies surface in a story, such as factually incorrect data or scores. Make sure you have documentation to back up your claim. If problems continue, contact the reporter's editor.
- **Don't** neglect to share what is working in the district. Suggest feature stories that show trends in school improvement backed by data.

Interview Techniques: How to Handle Tough Media Interviews on Data

Needling

Reporter:	"Oh, come on now, you don't believe trend data show improvements in teacher quality do you?"
Superintendent:	"Yes, I do, Beth, and... ." Go on to your key message.

Twisted Facts

Reporter:	"So your test scores are down again." (When, in fact, the test has changed or a new population of students is tested.)
Superintendent:	"Let's be clear about what the data tell us... ."

False Assumption

Reporter:	"So I assume you are going to spend taxpayer money to purchase a new test since this one shows bad results... ."
Superintendent:	"Well, Mike, I wouldn't agree with your conclusion." Steer the interview back on message.

Baiting

Reporter:	"So why does this community keep attacking your initiatives?"
Superintendent:	"You'll have to talk directly to those who raise concerns. What I can tell you is that our district is dedicated to... ." (Discuss public engagement efforts to gather and respond to community input.)

Pregnant Pause

Reporter:	The reporter remains silent after you answer a question.
Superintendent:	Do not rush to fill in the silence. Wait for the reporter to follow-up or ask, "Does that answer your question?"

Loaded Question

Reporter:	"You don't deny that the district knew all along about sagging test scores and refused to do anything about it."
Superintendent:	"Here's what we have done to improve low-performing schools... . Here's what has worked and where we need to improve... ."

Adapted from a Michigan School Boards Association media slide presentation.

Appendix C: Resources

Reports

"Building an Automated Student Record System." National Forum on Education Statistics, 2000.

This booklet is designed to lead education organization decision-makers through the process of making the best and most cost-effective decisions about information management systems devoted to individual student records. Available online at *http://nces.ed.gov/pubs2000/building/*

"Evaluation of California's Standards-Based Accountability System." WestEd, November 1999.

This evaluation examines the status and impact of local accountability systems, content standards, assessment measures, use of data, consequences and incentives, and challenges and assistance in school districts across the state. The document reports the findings of the study and its implications for policy. Available online at *http://web.wested.org/online_pubs/accountability/*

"Reporting Results: What the Public Wants to Know." A companion report to *Education Week's* Quality Counts '99.

A report of what parents, taxpayers and educators think they need to know about schools in order to hold them accountable. Available online at *http://www.edweek.org/sreports/qc99/opinion/edweekresults.pdf*

"Student Data Handbook for Elementary, Secondary, and Early Childhood Education." National Center for Education Statistics, 2000.

This handbook offers guidelines, developed by the U.S. Department of Education's National Center for Education Statistics, for current and consistent terms, definitions and classification codes to maintain, collect, report and exchange comparable information about students. Available online at *http://nces.ed.gov/*

"Using Data for School Improvement: Report on the Second Practitioners' Conference for Annenberg Challenge Sites." Annenberg Institute for School Reform at Brown University Tools for Accountability Project, 1998.

This report, developed after the second practitioners conference for Annenberg Challenge Sites, provides valuable examples of data collection, ways of thinking about accountability and resources. Real-life examples of schools implementing data-collection efforts to improve student achievement appear throughout the report. Available online at *http://www.annenberginstitute.org/images/using_data4.pdf*

"Vermont Department of Education. Equity and Excellence Action Planning Guide " *http://www.state.vt.us/educ/actplan/apcover.htm*

This resource provides a look at each step of the action planning process for educators.

Articles

"Data-Driven Decisions." Articles by Theodore B. Creighton, Raymond Yeagley, Philip A. Streifer, Francis Barnes, Marilyn Miller and George A. Goens. *The School Administrator,* April 2001.

This issue of *The School Administrator* includes a number of articles on data-driven decision-making. Available online at *http://www.aasa.org*

"On the Job: Data Analysts Focus School Improvement Efforts." Joellen Killian and G. Thomas Bellamy. *Journal of Staff Development,* Winter 2000.

This article presents one school district's model for building-level disaggregation and data analysis. Available online at *http://www.nsdc.org/library/jsd/killion211.html*

"Smart Moves: Achieving Your Vision Depends on Follow-Through." Joan Richardson. *Tools for Schools,* National Staff Development Council, August/September 2000.

This article discusses how school districts move beyond publishing and publicizing a school's newly developed vision statement and begin the real work of using the vision as a guide and a measure for school improvement. Available online at *http://www.nsdc.org/library/tools/tools9-00rich.html*

"This Goes on Your Permanent Record." Stewart Deck. *CIO Magazine,* Nov. 1, 2000.

This article examines how various school districts are building and implementing data warehouses to support districtwide, building-and classroom-level decision-making. Available online at *http://www.cio.com/archive/110100/permanent.html*

"Using Data to Improve Instruction." Articles by Nancy Protheroe; Jay Feldman and Rosann Tung; Yi Du and Larry Fuglesten; Thomas Glass; Brett Geis, Terrell Donicht and Steven Smith; and Thomas Fowler-Finn. *ERS Spectrum,* Summer 2001.

This issue of the *ERS Spectrum* includes several articles about the use of data in school improvement efforts.

Books

Accountability Dialogues: School Communities Creating Demand from Within. Kate Jamentz. WestEd, 2001.

This book explains some of the common misperceptions about school accountability and provides a strong rationale for including accountability dialogues in any accountability system. Examples from schools that use accountability dialogues provide a real sense of what can happen when responsibility for school improvement is shared among all the stakeholders in a school community.

At Your Fingertips — Using Everyday Data to Improve Schools. Karen Levesque, Denise Bradby, Kristi Rossi and Peter Teitelbaum. MPR Associates Inc. and American Association of School Administrators and National Center for Research in Vocational Education, 1998.

This handbook teaches educators new and productive ways of using data. Through step-by-step instruction, this book focuses on using available data to improve teaching and learning. Information available online at *http://www.mprinc.com*

Effectively Using Data to Drill Down and Make Better Educational Decisions. Philip A. Streifer. Scarecrow Press, Inc., 2002.

This book is a guide on how to use data in decision-making, with a strong emphasis on asking the right questions in a cyclical process designed to narrow the focus of inquiry.

Data Analysis for Comprehensive Schoolwide Improvement. Victoria L. Bernhardt. Eye on Education, Larchmont, N.Y., 1998.

This book teaches the layperson how to gather, interpret and use data to improve schools. Educators are given practical tools so they can make better data-based decisions.

Getting Excited About Data: How to Combine People, Passion and Proof. Edie L. Holcomb. Corwin Press, Thousand Oaks, Calif., 1999.

This book outlines a process for showing how well a school or district meets its primary goal: sustained student learning. The author offers tips on finding answers to questions about data, such as: What data do we need and how do we collect it?

Improving School Board Decision-Making: The Data Connection. National School Boards Foundation, 2001

This guidebook helps school board members understand what data are, ask for the appropriate data to inform decision-making, work with the superintendent to understand what data reveal, use data to support decisions on policy and budgets and inform the community.

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Is There a Public for Public Schools? David F. Mathews. Kettering Foundation Press, 1997.

This book provides school leaders with insights for engaging the public when undertaking school improvement efforts.

Thinking About Tests and Testing: A Short Primer in Assessment Literacy. Gerald Bracey. American Youth Policy Forum, Washington, D.C., 2000.

This book is a nonpartisan, objective discussion that helps readers understand the arguments now raging about "high-stakes tests" and their consequences. The book is simple and straightforward. Available online at *http://www.aypf.org/BraceyRep.pdf*

The School Portfolio: A Comprehensive Framework for School Improvement, Second Edition. Victoria L. Bernhardt. Education for the Future Initiative, 1999.

This book shows how to develop a school portfolio tailored to a particular school and vision. It explains that school portfolio is the most effective way to ensure a school's success at systemic reform. Extensively tested, it is a nonthreatening self-assessment tool that exhibits a school's goals, achievements and vision for improvement.

Schools and Data: The Educator's Guide to Using Data to Improve Decision Making. Theodore B. Creighton. *Corwin Press, Thousand Oaks, Calif., 2000.*

This book focuses on the relevance of statistics in the day-to-day lives of principals and teachers. This is an essential resource for any educator who wants to break through the statistical confusion to improve skills in problem analysis, program evaluation, data-driven decision-making and report preparation.

Using Data / Getting Results: A Practical Guide for School Improvement in Mathematics and Science. Nancy Love. Christopher-Gordon Publishers, 2002.

This book is a guide for inquiry into improving mathematics and science teaching and learning. It examines ways to engage school communities and produce powerful learning.

Internet Resources

Center for Accountability Solutions, American Association of School Administrators. *http://www.aasa.org/data*

AASA has created this website to help school leaders gather, use and report meaningful data on student, school and district performance. It includes a comprehensive listing of data resources that is updated regularly.

Appendix D: Glossary

A

Accountability — A process by which educators are held responsible for performance or outcomes.

Application service provider *(ASP)* — A third-party entity (generally for-profit) that manages and distributes software-based services and solutions to customers across a wide area network from one or more off-site locations.

B

Benchmark — A standard by which something can be measured or judged. Benchmarks can be used to monitor progress toward meeting goals.

C

Cohort – A group of students or others of the same age moving through a system together (e.g., all of the students who enter kindergarten the same year are part of the same cohort). Cohorts typically are used to measure progress over time and compare that progress with other cohorts.

Common cause — A regular feature of the school system (e.g., normal student attendance patterns).

Comparative analysis report — A report that contrasts two or more districts, students or other groups that have similar characteristics and can be compared to each other.

Criterion-referenced test *(CRT)* — A test that measures an individual's performance against a well-specified set of standards (distinguished from tests that compare students in relation to the performance of other students, known as norm-referenced tests).

Cut score — A specified point on a score scale, such that scores at or above that point are interpreted or acted on differently from scores below that point. In standards-based assessments, cut scores typically delineate passing from failing, proficiency from mastery, and so on.

D

Data — Factual information (such as measurements or statistics) used as a basis for reasoning, discussion or calculation. Data can be qualitative or quantitative. Good data must be both reliable and valid.

Data mining — The analysis of data for relationships that previously have not been discovered.

Data warehouse — A central repository for all or significant parts of the data that a system collects. A data warehouse typically is a database or collection of databases existing in virtual, rather than physical, space.

Decision support system *(DSS)* — A computer program application that analyzes and presents data so users can make decisions more easily.

Demographic data — Data that focus on the gender, socioeconomic background, race and ethnicity of students in a school or district.

Disaggregated data — Data broken down by specific student subgroups, such as current grade, race, previous achievements, gender, socioeconomic status, and so on.

Drill down process — A method of disaggregating data that begins with a general question, followed by increasingly specific questions that focus on smaller subsets of data.

F

Formative assessment — Assessment in which learning is measured at several points during a teaching/learning phase, with the primary intention of obtaining information to guide further teaching or learning steps. Formative assessments take a variety of forms, including questioning, comment on a presentation or interviewing.

I

International test — A test administered uniformly in a number of countries that compares student performance country by country (e.g., Third International Mathematics and Science Study).

L

Longitudinal data — Data measured consistently from year to year to track progress, growth and change over time. True longitudinal studies eliminate any students who were not present and tested in each of the years of the study.

M

Mission — A statement that defines what an organization is created to do and reflects its core values and beliefs to guide it toward its goals.

N

Normal curve equivalent *(NCE)* — Normalized standard scores on an equal interval scale from 1 to 99, with a mean of 50 and a standard deviation of about 21.

Norm-referenced test *(NRT)* — A test that compares individual student performance with a larger group, usually a national sample representing a diverse cross-section of students. (e.g., Iowa Tests of Basic Skills, Stanford Achievement Test). NRT results typically are measured in percentile ranks. (Norm-referenced tests should be contrasted with criterion-referenced tests, which measure performance compared to a standard or benchmark.)

P

Percentile score — A score that designates what percent of a norm-referenced group earned raw scores lower than a particular score. Percentiles often are divided into quartiles (groupings of 25 percent).

Perception data — Data that inform educators about parent, student and staff perceptions about the learning environment, which could also reveal areas in need of improvement.

Performance test — A test that requires students to demonstrate their abilities by providing examples of their work (e.g., portfolios, presentations, experiments).

Portfolio assessments — Assessments of a collection of a student's educational work that shows growth, self-reflection and achievement over time.

Q

Qualitative data — Data based on information gathered from one-on-one interviews, focus groups or general observations over time (as opposed to quantitative data).

Quantifiable proof — Proof that can be precisely measured.

Quantitative data — Data based on "hard numbers" such as enrollment figures, dropout rates and test scores (as opposed to qualitative data).

R

Reliability — The consistency of test scores over different test administrations, multiple raters or different test questions. Reliability answers the question "how likely is it that a student would obtain the same score if they took the same test a second time?"

S

Special cause — An unusual circumstance in a school system (e.g., fluctuations in attendance pattern due to a flu bug or a snow day).

Stakeholders — The students, parents, taxpayers, community members, business leaders, educators, board members and all others who have a share or interest in the school or district.

Standard — Something established for use as a rule or basis of comparison in measuring or judging capacity, quantity, content, extent, value, quality, and so on.

Stanine — A standard score of nine units in which 1, 2 or 3 indicates below-average performance; 4, 5 or 6 indicates average performance; and 7, 8, or 9 indicates above-average performance. Stanines are still used in some standardized tests.

Summative assessment — An assessment at the end of a period of education or training, which sums up how a student has performed.

V

Validity — The degree to which tests measure what they purport to measure.

Value-added — A measurement of the learning that a student achieves through participation in a program.

Vision — A future-focused statement about what an organization wants to be, where it wants to go and what kind of system it wants to create.

Using Data to Improve Schools: What's Working is one result of the work being done by the American Association of School Administrators' Center for Accountability Solutions (CAS). Working with CAS, school system leaders and district teams across the country are shifting from simply reporting data such as test results to using a wide range of data to promote school improvement. This guide explains how and provides school system leaders, school board members, principals, teachers, parents and other community members with insights and tools for cultivating a districtwide culture of inquiry that values the power of data to inform sound decision-making and improve teaching and learning.

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